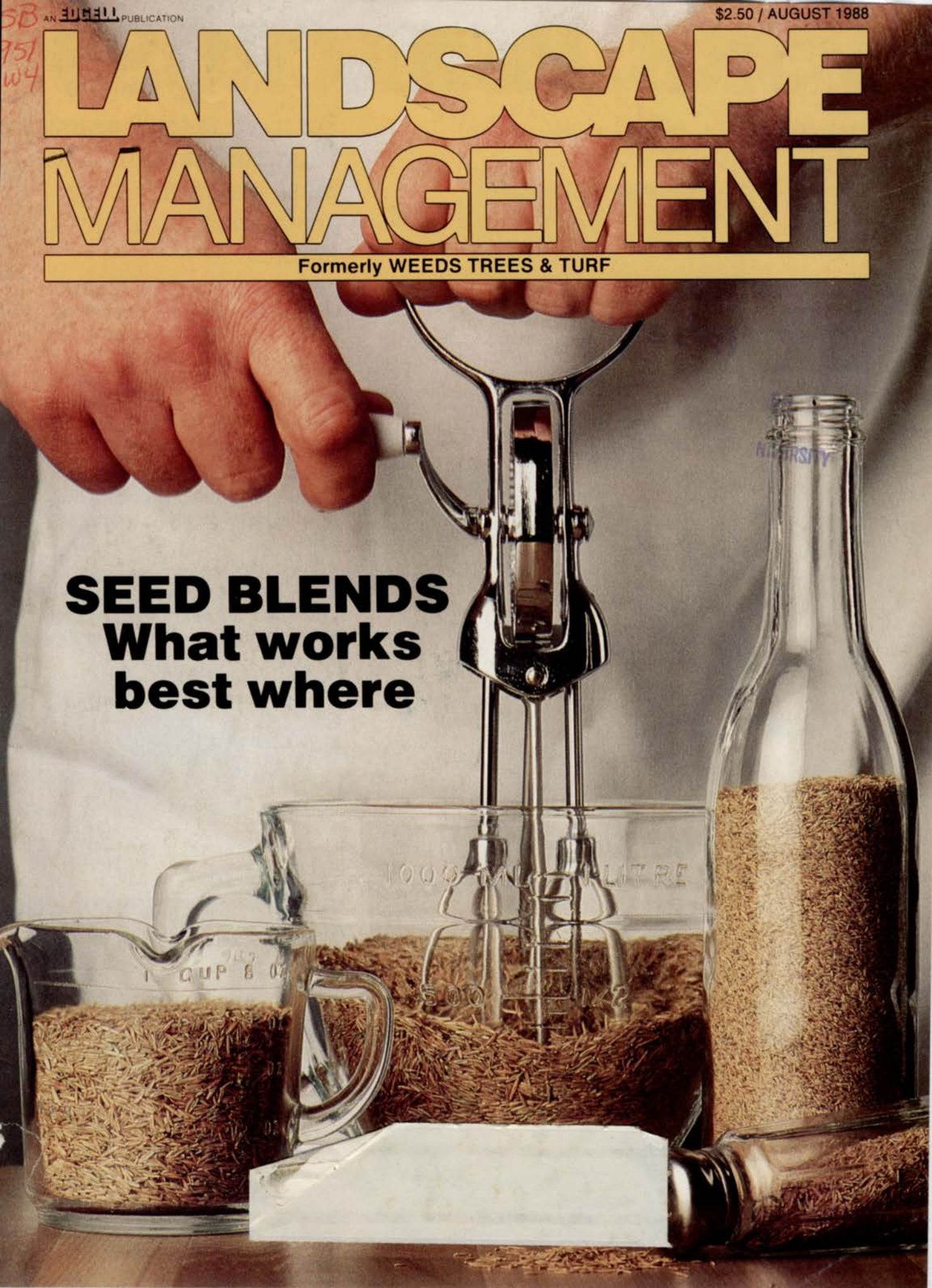
SB
751
W4

AN EDGELL PUBLICATION

$2.50 / AUGUST 1988

LANDSCAPE MANAGEMENT

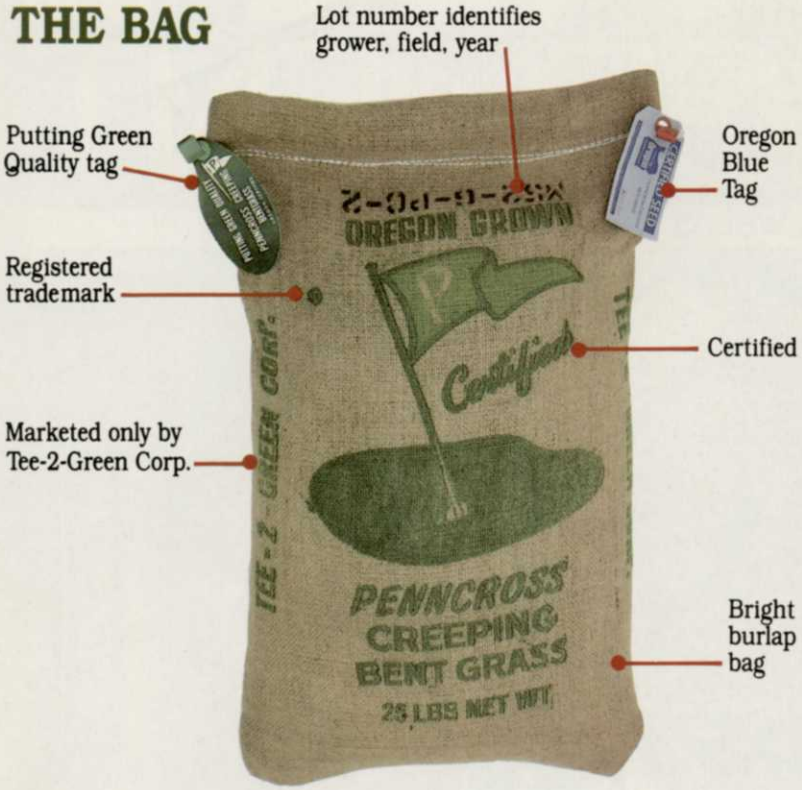
Formerly WEEDS TREES & TURF



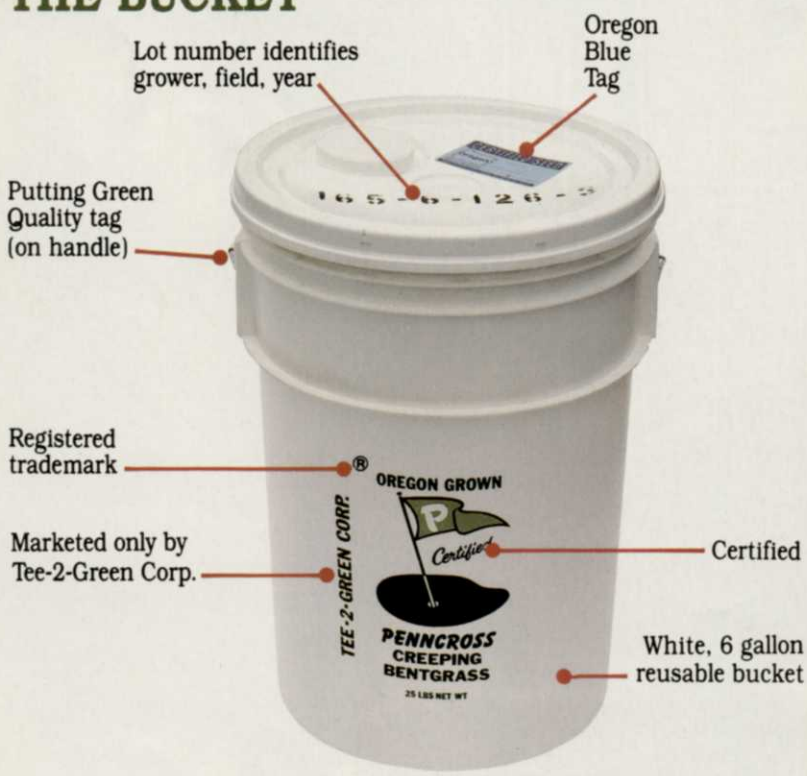
SEED BLENDS
What works best where

PURE. PENNCROSS.

THE BAG



THE BUCKET



For more than 30 years, Penncross remains the most specified putting green grass . . . of any species.

Talk about tried and true! Penncross creeping bentgrass has established a track record that stands to this very day. Steady performance through heat, drought, snow, storms and floods have established Penncross as *the* premium putting green surface for the most demanding players and superintendents.

This reputation can only be earned through years of dependable service. . . and most importantly. . .consistent putts!

A putting green is no place to putter around with an unknown bentgrass. Go with what you know. . .and you *know* Penncross from its years on top of the leaderboard.

THE SEED

MORE THAN 7,000,000 SEEDS PER POUND.

THE GREEN

Available through select distributors

TEE-2-GREEN CORP.
PO BOX 250 • HUBBARD, OR 97032
FAX – 503-981-5626
1-800-547-0255 • TWX 510-590-0957

Penn State University authorizes Penncross seed to be grown only from stolons and sold only as certified seed. Seed produced from Penncross seed cannot be labeled Penncross.

When good shots end up in bad lies on dollar spotted fairways, it can spot your course's reputation.

That's good reason to put Rubigan® in play. Dollar for dollar, nothing controls dollar spot better.

Just one Rubigan application controls even resistant strains of dollar spot for up to 28 days. And one case of Rubigan will treat up to 8 acres of greens and fairways.

Rubigan is the only fungicide labeled to treat and prevent all these other turf spoilers, too: Fusarium leaf spot, necrotic ring spot, summer patch, take-all patch and spring dead spot—plus large brown patch with a Daconil 2787® tank mix.

Keep your fairways, tees and greens dollar spotless—looking clean and beautiful all season long. Get Rubigan from your Elanco distributor. Or call toll-free: **1-800-352-6776.**

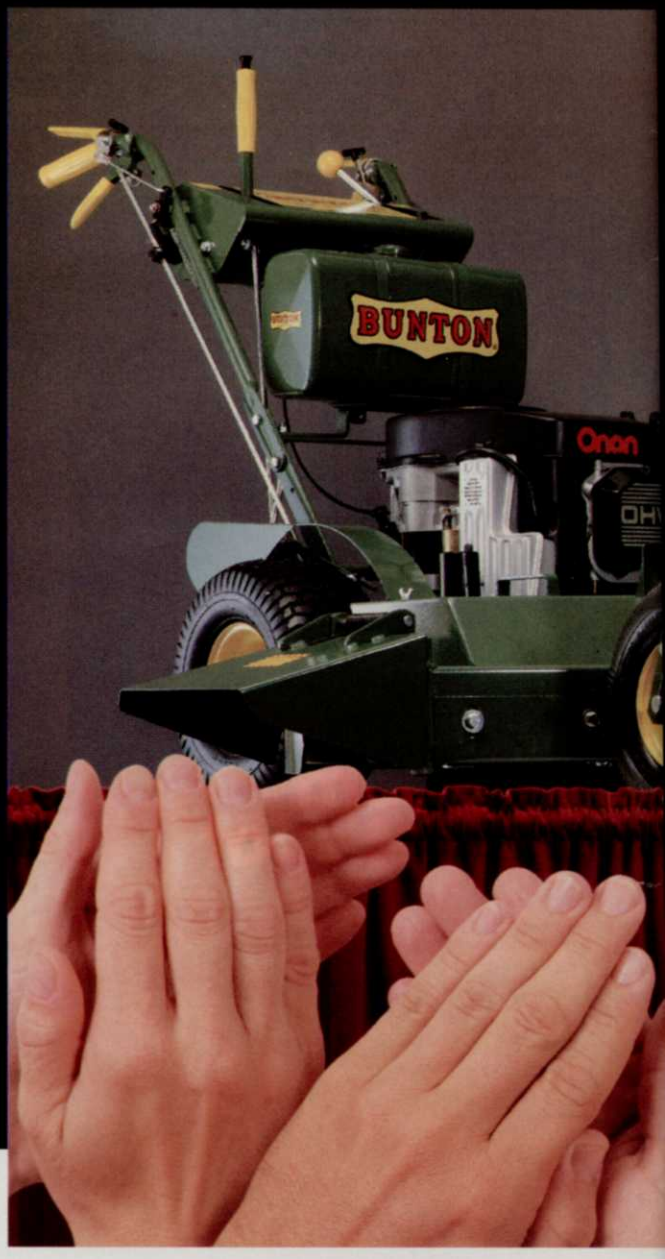
Elanco Products Company
A Division of Eli Lilly and Company
Lilly Corporate Center
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Rubigan® — (fenarimol, Elanco)
Daconil 2787® — (chlorothalonil, SDS Biotech)

Circle No. 109 on Reader Inquiry Card

REPEAT PE

BUNTON®

COMMERCIAL MOWERS

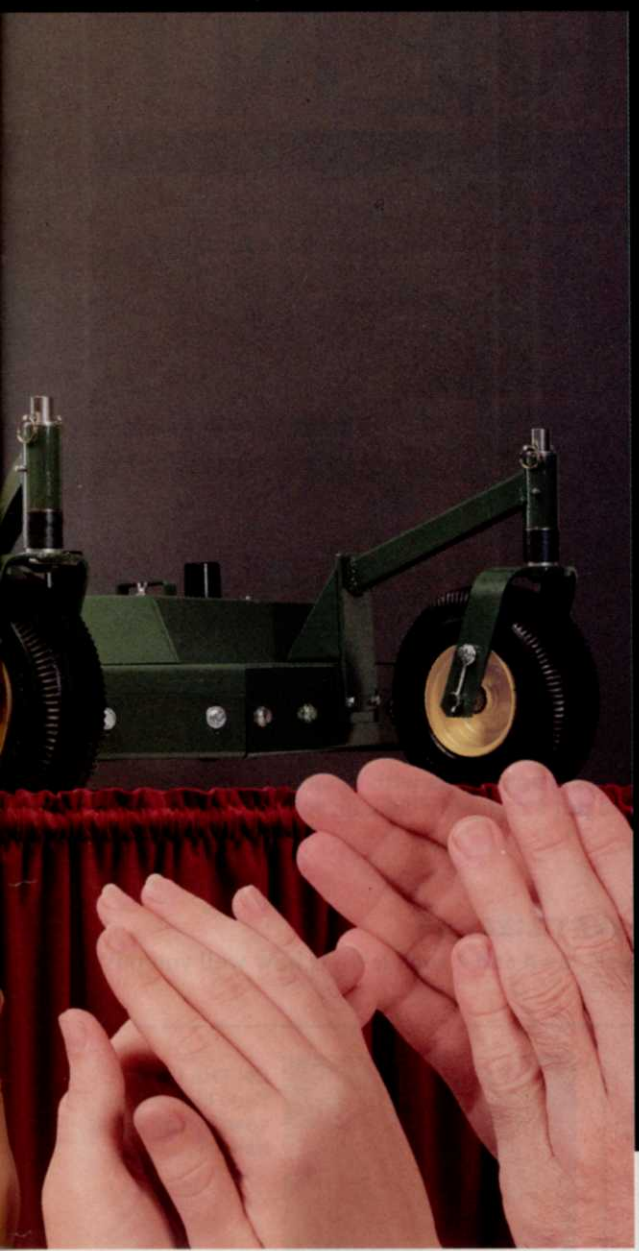


Bunton mowers have long been known as "repeat performers". Decks are reinforced heavy gauge welded steel, components that other manufacturers make from aluminum are steel, and all critical wear points have fittings so they can be greased for longer life. These, and other features have earned Bunton the reputation as the mower you can depend on every morning, year after year. They are so durable Bunton mowers are backed by a two year warranty.

Wouldn't you like to run Bunton mowers with a high performance 12.5 hp OHV engine that is technically advanced, made in

MOW ON-AND-ON WIT

RFORMERS



Onan

COMMERCIAL ENGINES

America, has guaranteed parts availability and is built for the repeat performance that commercial mowing demands? The Onan 12.5 sets a new standard for commercial mowers. All of the features of an OHV, combined with an overall superior design, make it the engine of choice for most commercial applications.

To learn how to mow on-and-on, call your Bunton dealer today for a demonstration.

BUNTON CO.
P.O. Box 33247
Louisville, KY 40232 USA
Phone: 502-966-0550 • Fax: 502-966-0564 • Telex: 204-340

BUNTON

H BUNTON-AND-ONAN

Circle No. 104 on Reader Inquiry Card

AUGUST 1988, VOLUME 27, NUMBER 8

LANDSCAPE MANAGEMENT

Formerly WEEDS TREES & TURF

32

46

24 COVER STORY: SEED BLENDS
With so many seed mixes and blends available, creating the ideal turf is easier than ever before.

32 ARCHITECTS AS PROBLEM SOLVERS
Brynwood Country Club saved time and money by working with a local landscape architect to solve drainage problems.

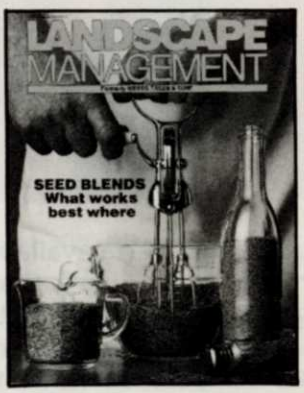
38 THE BLACK DEATH
Exactly where black layer comes from remains a mystery, but there are steps you can take to get rid of it.

42 DOWN BUT NOT OUT
Filing bankruptcy is not always synonymous with 'tossing in the towel.' Knowing the difference could put a company back on solid ground.

46 SOIL FERTILITY AND FERTILIZERS
The difference between a great lawn and a good lawn is how well you put fertilizers to work.

DEPARTMENTS

6 NEWS/TRENDS
8 GREEN INDUSTRY NEWS
50 ATHLETIC TURF
52 ON DESIGN
54 INSURANCE INSIGHTS
56 JOBTALK
60 PRODUCTS
64 CLASSIFIED
74 AD INDEX
76 PROBLEM MANAGEMENT



ON THE COVER: Seed blending as seen by Larry Kassell

LANDSCAPE MANAGEMENT (ISSN 0894-1254) is published monthly by Edgell Communications, Inc. Corporate and Editorial offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Advertising Offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130, 111 East Wacker Drive, Chicago, Illinois 60601 and 3091 Maple Drive, Atlanta, Georgia 30305. Accounting, Advertising Production and Circulation offices: 1 East First Street, Duluth, Minnesota 55802. Subscription rates: $25 per year in the United States: $50 per year in Canada. All other countries: $100 per year. Single copies (pre-paid only): $2.50 in the U.S.; $4.50 in Canada; elsewhere $8.00; add $3.00 for shipping and handling per order. Office of publication: Edgell Communications, Inc., 1 East First Street, Duluth, Minnesota 55802. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices. Copyright© 1988 by Edgell Communications, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

POSTMASTER: Send address changes to LANDSCAPE MANAGEMENT, P.O. Box 6198, Duluth, Minnesota 55806.

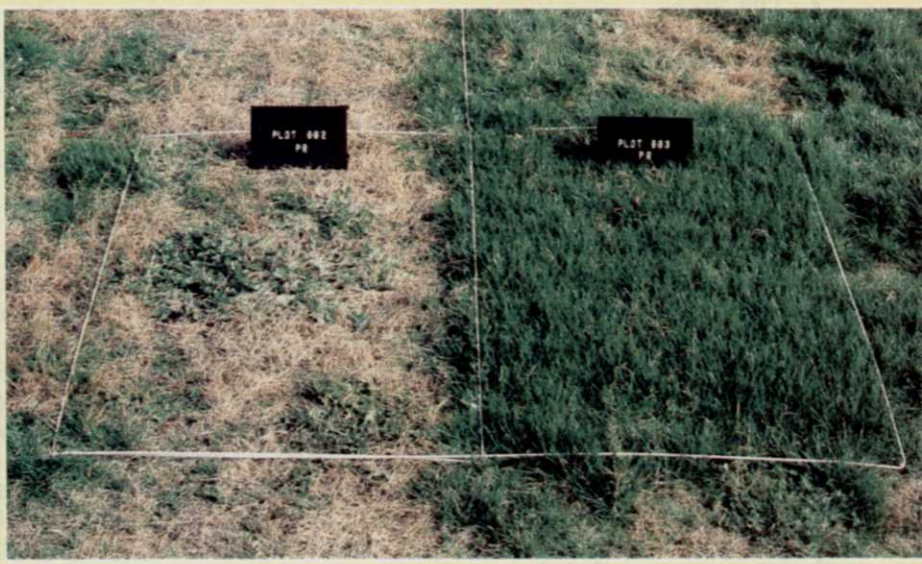
BPA ABP EDGELL COMMUNICATIONS

Turf-Seed's CITATION II

contains naturally pest resistant endophyte

. . . a fungus that occurs within plant tissue between the cells.

New turf breeding discovery proves resistance to bill bugs, sod webworm, and other pests without harmful chemicals!



Left, insect damage in perennial ryegrass. Right, endophytic ryegrass resists insect pests.

CITATION II Turf-Type Perennial Ryegrass

is well known for its rapid establishment, fine texture, dark green color, improved mowability and drought tolerance, both in a monostand or as part of CBS II blend. But, the REAL plus is Citation II's high endophyte level (over 80%) that make it naturally resistant to leaf eating insects.

This plus results in savings . . . in chemical costs to maintenance people and less exposure to insecticides for applicators, homeowners, golfers and picnickers.

Citation II is not only an investment in finer turf, but it's a savings account for turf managers . . . and our delicate planet.

PVP 8400142. Unauthorized propagation prohibited.

Black lines are endophyte mycelium in leaf tissue.

Magnified endophyte in seed.

Qualified turf grass associations can earn cash for turf research by saving Citation II Oregon certified blue tags. Call us or write for details.

Produced and marketed by:

Turf-Seed, Inc.

PO Box 250, Hubbard, OR 97032
Outside Oregon 1-800-247-6910
503-981-9571 TWX 510-590-0957
FAX 503-981-5626

Circle No. 143 on Reader Inquiry Card

New ornamental crop

■ A flower-inducing hormone applied by a floriculture specialist at the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida is expected to bring a popular landscape plant indoors.

The hormone induces *ixora* to produce blooms simultaneously and on demand, making the shrub a new, commercially competitive ornamental, notes extension floriculture specialist Benny Tjia. Star-shaped blooms appear six to eight weeks after treatment, making it ideal for shipping to northern markets.

A conservative prediction is that sales of *ixora* will increase from 100,000 to 1 million plants annually because of the hormone, Tjia says.

"Sixty percent of the ornamental flowers imported into Florida now come from Columbia," he adds. "That totals about $750,000 worth of plants arriving each day. But instead of rolling over and playing dead, we're learning to cultivate plants that competitors can't."

More seed pregermination under way

■ More and more landscapers are looking toward pregermination of their seed before planting in order to get quicker germination in inclement weather, repair or renovate athletic fields, or to create a turf stand faster than normal seeding methods, says Nicholas R. Spardy, a sales representative with Northrup King Co. As proof of this trend, Spardy reviewed five (count 'em) pregermination methods and extolled the virtues of each. They are:

The Candlestick Park Method, used primarily to repair divots, involves mixing 150 pounds of Turface, 100 pounds of sand and 50 pounds of seed. Keep it in a moist state for up to seven days, layer it in, water it well and mound it.

The Kansas City Method involves soaking the seed in water that is changed every 12 hours. Do this until radical emergence can be seen.

The Northrup King Method has you put seeds in a burlap sack, soak them for 12 hours and then dry them for 12 hours at room temperature. Continue this cycle for seven days.

The Milwaukee Brewers Method, for drought repair, uses two ounces of Aqua Gro to each 55 gallons of water. Soak seeds in this solution, which must be changed every four hours. On the third day spread the seed with Milorganite 6-2-0.

Cal-Poly Method uses an aquarium pump to provide additional oxygen to water, which is changed every 12 hours.

Though all demonstrated a certain level of success, Spardy says, "Changing the water supply or somehow giving the seed a constant oxygen supply seems to be the key to success." That's because changing the water removes seed exudate, he says.

Another avenue being researched, dubbed the *Northrup King Modified Method*, involves placing the seed in 77°F water, which has cut the time of radical germination in half.

LM Editorial Staff

Jerry Roche

Will Parry

Jeff Sobul

LM

EDITORIAL STAFF

Jerry Roche, Editor
Will Perry, Managing Editor
Jeff Sobul, Associate Editor
Office: 7500 Old Oak Blvd.
Cleveland, OH 44130
(216) 243-8100

MARKETING STAFF

Dick Gore, Publisher
Office: 455 E. Paces Ferry Rd.
Suite 324
Atlanta, GA 30305
(404) 233-1817

Jon Miducki, National Sales Manager
Marsha Dover, Midwest Sales Manager
Gloria Cosby, Eastern Sales Manager
Bob Earley, Group Vice President
Office: 7500 Old Oak Blvd.
Cleveland, OH 44130
(216) 243-8100

Robert Mierow, W. Coast Representative
Office: 1515 NW 51st Street
Seattle, WA 98107
(206) 783-0549

Tom Greney, Senior Vice-President
Office: 111 East Wacker Drive
Chicago, IL 60601
(312) 938-2344

SUPPORT STAFF

Carol Peterson, Production Mgr.
Marilyn MacDonald, Prod. Supervisor
Deb Georges, Graphic Design
Becky Gothner, Circulation Super.
Bonnie DeFoe, Directory Coordinator
Gail Kessler, Reader Service Manager
Office: 120 West Second St.
Duluth, MN 55802
(218) 723-9200

David Komitau, Graphics Coordinator
Ted Matthews, Promotion Director
Office: 7500 Old Oak Blvd.
Cleveland, OH 44130
(216) 243-8100

EDGELL COMMUNICATIONS

Robert L. Edgell, Chairman; Richard Moeller, President; Lars Fladmark, Executive Vice President; Arland Hirman, Vice President/Treasurer; Thomas Greney, Senior Vice President; Ezra Pincus, Senior Vice President; Joe Bilderbach, Vice President; James Gherna, Vice President; George Glenn, Vice President; Harry Ramaley, Vice President.

Think Of Us As Turf Insurance.

To insure the health of next year's turf, Fall fertilization with Par Ex® is your best policy. Fall is your root feeding season. The only time of year when the foundation of your turf can be expanded and strengthened with less competition from leaves for available carbohydrates.

IBDU: the only nitrogen source that doesn't rely on bacterial action or temperature for release. It is activated only through moisture (hydrolysis) to slowly release nitrogen all through the Fall and early Winter. Right up to the time the ground freezes, extending the greening of your turf much later than conventional slow-release fertilizers can. While it works to build a strong and healthy root and rhizome system in preparation for next year's Summer stresses.

Yes. You can buy a cheaper fertilizer this Fall. But don't expect it to perform when your turf cools down below 55° and microbial activity stops. Then, only Par Ex can really get to the root of the matter. And anything that doesn't is no bargain.

So call your Par Ex representative today and find out exactly how affordable Par Ex is. We guarantee you'll rest a lot more comfortably all year round.

par ex
THE EX STANDS FOR EXCELLENCE

PAR EX® and IBDU® are registered trademarks of Vigoro Industries, Inc., P.O. Box 512, Winter Haven, FL 33882 813/294-2567.

Circle No. 113 on Reader Inquiry Card

GOLF

'Exciting time to grow grass,' super says

Danny Quast answering a question at Jacobsen's College Seminar.

"It's an exciting time to grow grass, and a great time to get into this business," said Danny Quast, superintendent at the Milwaukee Country Club. He was speaking to 38 top graduating turf students at the annual College Student Seminar sponsored by Jacobsen Division of Textron this summer.

"You've got the best times ahead of you," Quast said. "The knowledge and tools are so much better today, it makes the job more enjoyable. Turf equipment and chemicals are better today than they've ever been in my career."

Quast discussed management of people as well as turf, and gave the students a few pointers for success. "If you're dedicated and have a professional attitude toward the job, you'll go far," he said.

Quast has donated his time and expertise for the past 13 years to participate in the 21-year-old seminar.

PESTICIDES

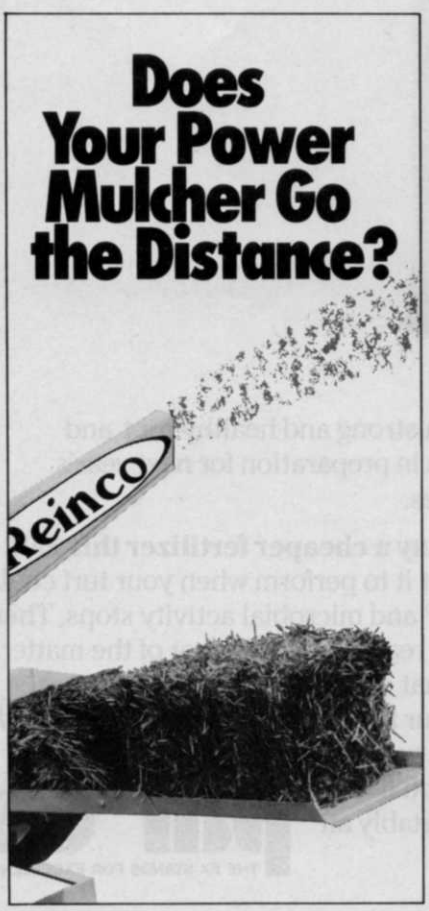
Anti-pesticide law is overturned, thanks to Wisconsin organization

A Wisconsin judge has overturned a Town of Casey ordinance that prevented the use of pesticides on private property.

Washburn County Circuit Court Judge Dennis C. Bailey said "...This court does find and conclude that the area of regulation and use of pesticides and herbicides [by local political subdivisions] has been pre-empted by federal law." Judge Bailey further concluded that the ordinance, which was drafted by the Office of the Wisconsin Public Intervenor, has also been pre-empted by state law.

The suit was brought by Casey land owner Ralph Mortier and supported by the Forestry/Rights-of-Way/Turf Coalition. The coalition reports that the court battle was a costly victory, but one that would have been even more expensive to lose.

Executive Director Russell R. Weisensel is asking for $25 contributions from individual members and $50 contributions from county members to defray its court costs. The address is 1400 East Washington Avenue, Suite 185, Madison, WI 53703-3041.



Circle No. 138 on Reader Inquiry Card

ORGANIZATIONS

CLCA members let fingers do walking

This summer, members of the California Landscape Contractors Association will again get the opportunity to participate in the CLCA's Yellow Pages Program. This program coordinates the purchase of line listings in telephone directories throughout the state. Here's how it works:

The CLCA sent a certified mailing to its members in June that asked them to choose space under one of three captions—"installation," "maintenance" or "installation/maintenance"—in the landscape contractor's section of 104 utility directories. Each $60 listing includes the company name, address, and telephone number that will appear beneath the CLCA logo and the phrase "Sign of the Accepted Professionals."

Last year the association's support for the program amounted to $20,000—$66 to contractors for each listing purchased.

READERS RESPOND

Has the dry weather affected your turf at all this season?

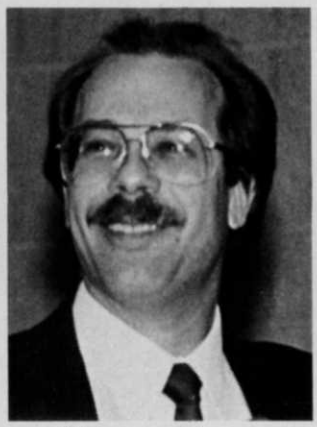
Unless you've been off the planet for the last month or two, you know that most of the country is experiencing drought conditions which are, in some cases, pretty severe.

It may be good for the irrigation business, but how has the drought affected turf and landscape managers? During the first week of July, LANDSCAPE MANAGEMENT asked turfgrass and landscape managers about the drought.

"Lawns are not doing well in some places, but so far we've been pretty lucky. I don't think it's affected our lawn care business. We normally only put light applications of fertilizer on at this time of year. "In the short run, it won't hurt. In the long haul, if it stays droughty all fall, people might do anything for next year.

"We're anticipating more seeding and aeration this fall."

—Paul Schnare, Ph.D.
Accu-Grow
Cape Girardeau, Mo.



"We're working on our fifth week without rainfall. Temperatures have been in the high 90s to low 100s. We've set four records. Lawns are dormant, fairly crisp.

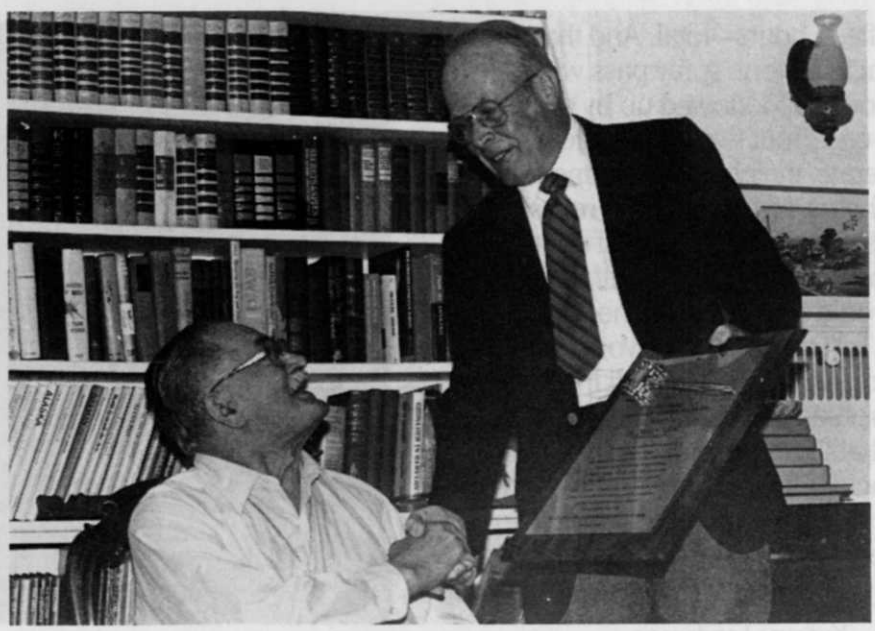
"I don't think the service calls are excessive and I don't think the cancellations are excessive. The mowing crews are hurting. That's where they make their money. Quite a few are mowing anyway."

—Phil Catron
MAVC Services
Damascus, Md.

"A lot of places, including ourselves, are just running out of water. Next week we'll decide if we should stop watering fairways.

"We're finding out what our strong and weak points are. We're not getting devastated yet, but the next few weeks could get ugly. But I'm optimistic."

—Brice Gordon
Jackson CC
Carbondale, Ill.



'Life Chairmanship'

Fred V. Grau, Ph.D., has been made Honorary Life Chairman by the Musser International Turfgrass Foundation after serving 20 years as president. Described as "a man of vision who influenced the future through his quest for new turfgrasses, improved management practices and expanding turfgrass research," Grau (seated) received his award from Eliot C. Roberts, executive director of The Lawn Institute.

Ours Does.

The TM-Jr is our smallest and most economical Power Mulcher, yet it will blow hay or straw mulch (and even some bark mulches) a distance of 30 feet (100 feet with extension hose) at a rate of up to two bales per minute. The "Jr." can also be used as a vacuum for leaves.

For larger mulching jobs, consider models TM7-30 or M80C. For more information on our Power Mulchers, mulch diskers (crimpers) or our complete line of Hydrograssers, write or call toll free, 1-800-526-7687.

Reinco
P.O. Box 512
Plainfield, NJ 07061

Circle No. 139 on Reader Inquiry Card

"WE MAKE MONEY OTHER COMPANIES

"Ten years ago when we first started using Roundup® herbicide for renovations, some lawn care operators in the area thought we were making mistakes...misapplying the product. I mean our signs started showing up in a lot of browned-out yards. We were doing renovations without rototilling or sod removal and getting predictable results every time.

"That's the thing about Roundup, it eliminates a lot of variables and problems that you can have with rototilling or overseeding. With Roundup you get a uniform stand of quality turf. You don't inherit any weeds or old turf to cause problems.

"With Roundup we can do a 10,000 square foot lawn in about fifteen hours – total. And that includes one spray pass with Roundup followed up by one day's work about two weeks later to aerate, thatch, slit-seed and fertilize. There's no mud and no mess. Plus, it's about half the time it would take to rototill and easily half the cost it would be to remove the sod.

"The guys who avoid renovations are thinking of all the problems of mechanical methods. That's why we only use Roundup. Incidentally, the lower cost of chemical renovation helps make it an easier sell to the homeowner, too."

George Kanavas
Kanavas Landscape
Management, Inc.
Elm Grove, Wisconsin

George Kanavas, pioneered with Roundup in lawn renovations over 10 years ago. Now it's the only kind of treatment he uses.

ON JOBS WON'T TOUCH."

ROUNDUP TURNS PROBLEMS INTO PROFITS

George Kanavas' experience in renovating lawns using Roundup® herbicide is typical of operators across the country. Roundup turns renovations into profit opportunities instead of problems. It's the modern, time, labor, and cost effective way to renovate. Using Roundup avoids the problems of rototilling or overseeding. It gives the homeowner the lawn he wants. And gives you the chance for referrals, continued maintenance and additional work from a satisfied customer.

GET THIS FREE SALES KIT

Learn how Roundup can help build your business with profitable renovations. Send in the coupon or call 1-800-323-1421 and you'll receive a free Roundup herbicide Lawn Renovation Guide plus a complete sales kit with samples of letters, invoice stuffers, doorknob hangers and a prospecting guide that shows you how to build this profitable segment of your business. You can't lose because there's no obligation. But there's sure a lot of business out there you could be getting.

Call or send in the coupon for this free sales kit. It tells you everything you need to start profiting from renovations with Roundup.

Monsanto

☐ Yes, I'd like to learn how to make money on renovations with Roundup. Send me the Lawn Renovation Guide and Sales Kit.

Name _____

Company _____

Address _____

City _____

State _____ Zip _____

Phone _____

Send to: Lawn Renovation Kit Offer
Monsanto Industrial
and Residental
Marketing C2NC
800 N. Lindbergh Blvd.,
St. Louis, Missouri 63167

ALWAYS READ AND FOLLOW THE LABEL.
Roundup is a registered trademark of Monsanto Company.
© Monsanto Company 1988

RIP-8-201D

Circle No. 130 on Reader Inquiry Card

SHORTCUTS

WHOOPS!...A landscape architect does not a golf course architect make, says **F. Truitt Rabin Jr.**, ASLA, who was quoted in our April issue. "(In the article) I am described as a landscape architect and golf course designer. I surely do not consider myself a golf course architect," Rabin writes. "Perhaps 10 or 15 years ago I would have been naive enough to say, 'yes, our firm can lay out a golf course.' But, having worked with qualified golf course architects, I know that the art and science of golf course design is best in the hands of those trained to do it." Thank you for the clarification, Mr. Rabin.

FERMENTA RESPONDS... In the wake of the Prior vs. Diamond Shamrock (now Fermenta Plant Protection Inc.) lawsuit, Fermenta has issued a public statement defending its product, Daconil 2787. Daconil, of course, was declared innocent in the death of Navy Lt. George Prior. The statement noted that Daconil has been used on golf course turf for more than 18 years with more than *3 billion* rounds of golf being played without any reported incidents of toxic epidermal necrolysis (TEN), which Lt. Prior died from. "A review of all medical writings regarding TEN confirmed that Daconil 2787 has never been associated with the disease," it concluded.

CHARTER MEMBERS...Whitey Herzog, manager of last year's National League champion St. Louis Cardinals, and his wife Mary Lou were presented charter memberships in the Champions League of Quail Creek Golf Club, St. Louis. Course president **Richard J. Stahlhuth** and **Hale Irwin**, a fellow St. Louis sports figure and course designer, also presented the Herzogs with an architect's rendering of the course. The Champions League was established by Irwin to honor sports figures who exemplify the spirit and determination of St. Louis sporting tradition. Members are entitled to complimentary golf and other benefits.

ARNIE'S ARMY... Lofts Seed will continue to march in step with golf great **Arnold Palmer** until 1993. Lofts president **Jon Loft** recently made the agreement with Palmer, who has served as a company spokesman for nine years. One of Lofts' proprietary ryegrasses is named after Palmer.

GREAT AMERICAN... You need a trencher? Go with Ditch Witch, *Fortune* magazine says. *Fortune* named Ditch Witch trenchers one of the "100 Products America Makes Best" in its March 28 issue. "Building a family business from a single idea," notes president **Ed Malzahn**, "and watching an entire industry spring up is exciting. We believe it is indicative of never giving up...never sacrificing principles for expediency or quick profit."

PEOPLE

Penn State agronomist retires after 30 years

John C. Harper II, an extension agronomist at Pennsylvania State University, retired June 30 from his position with the university.

"It caught us a bit by surprise," notes Elwood Hatley, Ph.D., one of Harper's colleagues at Penn State.

Harper was a fixture in the Agronomy Department for 30 years. "I just figured I'd worked enough," Harper decided. He will remain in contact with the industry as a turf consultant.

Dr. John Harper

"He was kinda Mr. Turf around here for so long," Hatley adds. "It will be hard to fill his shoes."

Before joining the staff at Penn State, Harper was an agronomist with Toro. Before Toro, he headed USDA's Beltsville, Md. research facility. He received his Ph.D. from Penn State.

In addition to consulting, Harper plans to travel and play golf in his retirement.

SEED

Oregon seedsmen to publish report

The Oregon Seed Council and the Oregon Seed Trade Association will publish a "State of the Industry" report about Oregon's multi-million dollar seed business.

"This report will review our history, provide useful reference and explain many of the technical aspects of the business," says Dennis Hays, executive director of the Oregon Seed Trade Association. "We want to educate our legislators and other Oregonians about how vital this industry is."

The 32-page, full-color magazine will be mailed in mid-September and will be published by Medi-America, Inc. It will be circulated to agricultural professionals, public officials, regulatory agencies and legislators. It will also appear in next month's *Oregon Business* magazine.

WEEDS

Weevil and spraying control water hyacinth

A weevil introduced in Florida 16

Lean, green low-thirst machine.

Again rated #1 in National Turf Grass Evaluation programs.

Arid's finer leaves, rich dark-green color, lower growth and deep roots create an attractive turf requiring less maintenance. Deep roots enable Arid to better withstand temperature extremes—cold winters and hot summers. Arid is an excellent choice for humid transition zones. It has improved drought and heat tolerance and requires less water. Arid's low-growth characteristics mean less mowing.

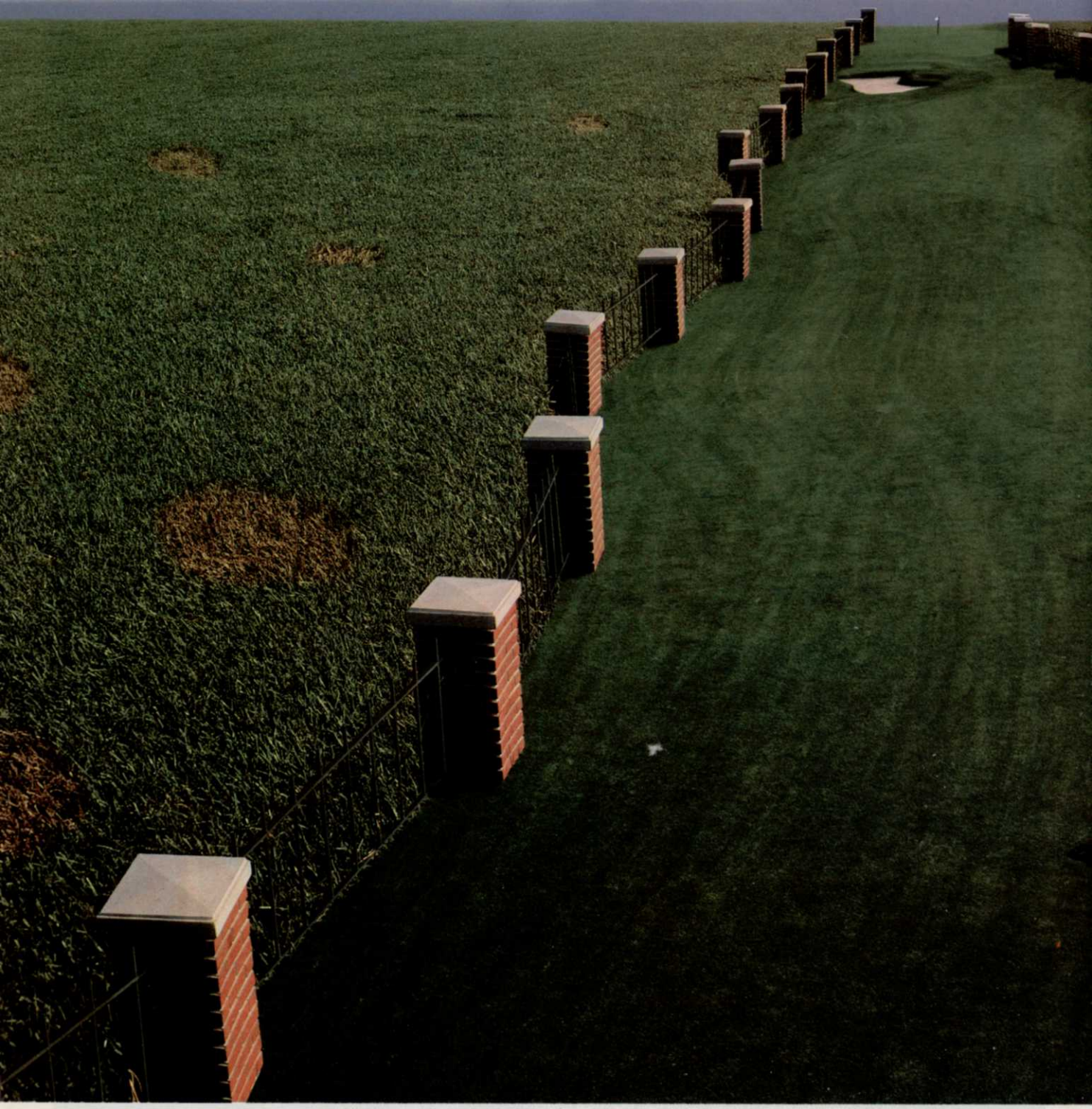
Order Arid from your seed wholesaler or sod distributor.

Another fine, quality controlled product of
Jacklin Seed Company

Arid

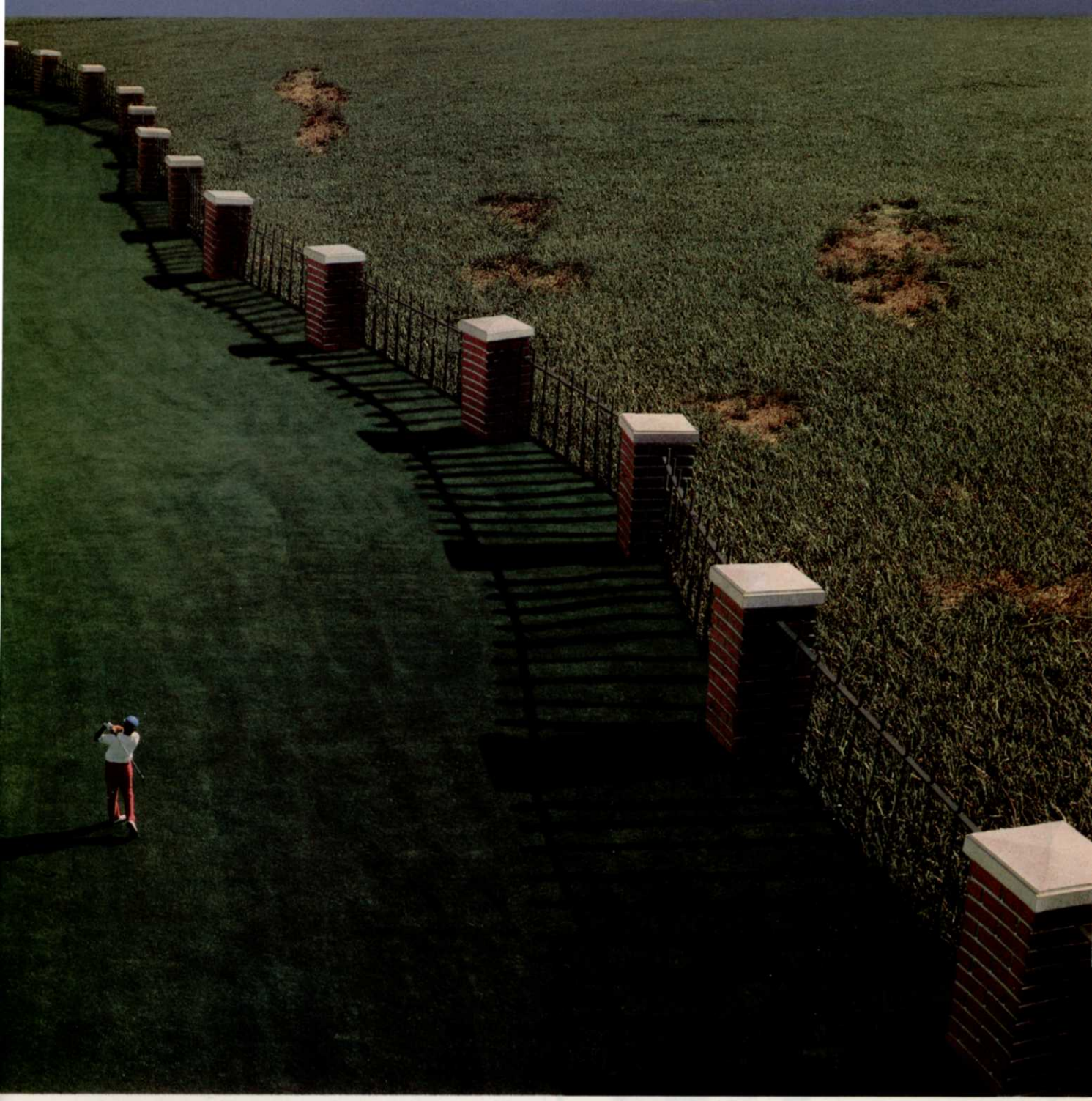
TURF TYPE TALL FESCUE

Circle No. 116 on Reader Inquiry Card



Keep your fairways looking great.

44061



Golfers love to play on beautiful fairways. It's that simple. Which is why it's so important to keep your course in top shape. That means controlling diseases like dollar spot and anthracnose. And that means a program using BAYLETON® fungicide.

BAYLETON is taking care of more and more beautiful fairways because more superintendents are discovering how long it lasts. How much they save in application costs by making fewer applications. And how good it makes them and their fairways look.

BAYLETON. Because golfers play favorites. Specialty Products Group, Box 4913, Kansas City, MO 64120.

BAYLETON is a Reg. TM of Bayer AG, Germany.

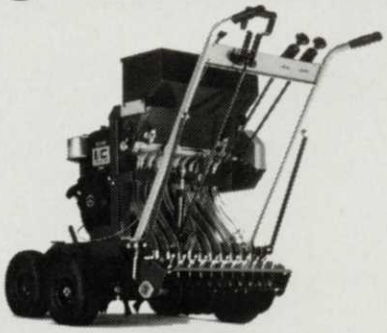
Bayleton

Mobay Corporation
A Bayer USA INC. COMPANY

Bayer MOBAY

Circle No. 127 on Reader Inquiry Card

What puts you in the groove for greener lawns?



ANSWER: The Ryan Mataway® Overseeder: It feeds seeds directly into the groove it cuts for maximum germination and greener results. It's the only changeable overseeder that gives you the flexibility to power rake, overseed, or do both at the same time. For all the facts, return the reader service card in this publication today.

RYAN®

BUILT TO LAST

6188 Ryan, OMC-Lincoln, P.O. Box 82409, Lincoln, NE 68501
Toll Free: 1-800-228-4444

© Outboard Marine Corporation, 1987. All rights reserved.

Circle No. 107 on Reader Inquiry Card

TURFCO **EDGE-R-RITE**

MULTI-PURPOSE
TURF EDGER

Just like a small sod cutter, the Blade does not spin, the oscillating motion does not throw debris.

Self-propelled and push models available.

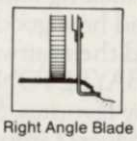
Rugged design for commercial use.

Disc Blade

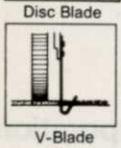
Optional Blades:

◀ Disc Blade for cutting straight edge along sidewalks and driveways.

Right Angle Blade for golf course sand traps, and flower beds. ▶



Right Angle Blade



V-Blade

◀ "V" Blade for removing a strip of turf along a sidewalk.

Write or call for detailed literature

Turfco Mfg., Inc.
3456 N. Washington Ave.
Minneapolis, MN 55412-2688
Ph. 612/588-0741
Telex 5106013762

TURFCO

Circle No. 144 on Reader Inquiry Card

NEWS *from page 14*

years ago combined with more frequent spraying has helped significantly reduce the state's water hyacinth problem, says Joe Joyce, Ph.D., a University of Florida water weed expert.

The Neochetina weevils' population in Florida is so strong that hyacinth, once Florida's most prevalent weed, now accounts for less than 20 percent of aquatic weed spraying in Florida, or only $2 million of the states $11.6 million aqautic weed control budget.

"I think Floridians have every reason to be proud of the state's recent record on control of water weeds," said Joyce. "In 1973, 31,000 acres of the St. John's River were sprayed for water hyacinth. Last year less than 5,000 acres were sprayed by state and federal agencies."

Using systematic maintenance control reduces the amount of herbicide needed, lessens the impact of the plant on swimming, boating and fishing and allows some flexibility about when you spray, adds Joyce.

INDUSTRY

Chevron, Sumitomo form joint venture called Valent U.S.A.

Chevron Chemical Company and Sumitomo Chemical Company Ltd. of Japan signed a joint venture agreement creating Valent U.S.A. Corporation, which will develop and market agricultural chemical products in the United States.

The new company will be headquartered in Walnut Creek, Calif., and will be staffed by about 250 employees on loan from the two parent companies, according to Chevron's Mike Marcy.

Major existing products that will be handled by Valent U.S.A. Corp include: Bolero, Cobra, Diquat, Genate Plus, Genep, Furloe and Rhino herbicides; Orthene, Dibrom, Monitor and Volck insecticides; Ortho X-77 spreader adjuvant and Sprout Nip.

LEGISLATION

Court puts OSHA regulation on hold

Enforcement of the Occupational Safety and Health Administration's new reporting requirements has been temporarily delayed by a federal court. The U.S. Court of Appeals for the District of Columbia Circuit has temporarily stayed OSHA's Hazard Communications Standard for non-manufacturing employers.

The requirements, which apply to LCOs and all other employers who work with hazardous materials, were to become effective May 23. The court ordered the stay a week before that date.

The reporting requirements will not change from their present form with the possible exception of a few industries, OSHA spokesperson Akio Konoshima says. He notes that the stay was sought since the construction industry didn't feel it had enough time to comment on the standard.

"Our recommendation," says Richard I. Lehr, general counsel for the Professional Lawn Care Association of America, "is that lawn care employers proceed with implementation of compliance with the Hazard Communications Standard." The PLCAA has available materials to help LCOs meet the requirements, which include keeping records of product labels and instructing employees on various aspects of hazardous materials handling. Contact the PLCAA for more information at: 1225 Johnson Ferry Rd., NE, Suite B-220, Marietta, GA 30068; (404) 977-5222. **LM**

LANDSCAPE MANAGER OF THE YEAR

co-sponsored by

1987 Landscape Manager of the year
Michael Hugg

Entry forms are now being accepted by the Professional Grounds Management Society and Landscape Management magazine for their second annual "Landscape Manager of the Year" award.

Purpose of the award is to recognize superior job performance among landscape managers, to challenge those involved in the industry to achieve higher standards of excellence, and to bring national recognition to deserving managers.

Any person directly responsible for the professional maintenance of one or more landscapes is eligible to enter. Applicants will be judged according to job performance, honors and awards, procedures and philosophies, and contributions to the green industry. Applicants will be asked, at the time of entry, to submit four 5 x 7 black-and-white glossy photos and 10 color 35mm slides of current work areas with a short narrative on each.

(clip and mail)

Applicant's name **Title**

Applicant's company

Official entry form should be sent to:

Name **Title**

Company

Address **City/State** **Zip Code**

Mail to: PGMS, Landscape Manager of the Year, 1201 Galloway Ave., Suite 1E, Cockeysville, MD 21030

Now, a better way to avoid costly winterkill and transplant shock:

Let us send you a sample of Transfilm® Anti-Transpirant so you can see for yourself that this patented formulation is dramatically more effective and economical in reducing moisture loss than conventional anti-transpirants.

Everett Mealman, President
PBI/Gordon Corporation

Transfilm is perhaps the fastest-growing product that has been introduced into nursery management in recent years.

...And why not!

After all, nothing is more important in plant growth and general health and appearance than the maintenance of a natural relationship between the rate of moisture absorption through the plant root system and the rate of moisture loss through the exposed portion of the plant foliage.

...And nothing... absolutely nothing is as economical and efficient in reducing moisture loss in plant life as PBI/Gordon's patented Transfilm.

As you know, moisture loss in a plant primarily occurs through the stomas, and thus it is that anti-transpirants are designed to cover the stomas with a semipermeable, flexible film to reduce the amount of moisture that can be exhaled.

GORDON'S
TRANSFILM
A FILM-FORMING SYNERGISTIC COMPLEX OF POLYETHYLENES — POLYTERPENES ANTI-TRANSPIRANT FOR FLOWERS, SHRUBS, TREES & TURF
CAUTION
NET CONTENTS ONE U.S. GALLON

All anti-transpirants have the same objective, but not all anti-transpirants have the same capability. In fact, U.S. patent no. 4,058,409 provides proof that the Transfilm formulation is up to 4.4 times more effective than other brands in reducing water loss through the stomas, and lasts up to twice as long.

No wonder we are so eager to get a sample of Transfilm into your hands!

Why Transfilm is superior

Other anti-transpirant films are made of polyterpene (polymers), and it is characteristic of polyterpene molecules to aggregate in clusters (globs) rather than spread out uniformly throughout the entire surface of a polyterpene film.

In those areas of a polyterpene film where the molecular concentration is heavy, the

effectiveness and efficiency of the film is excellent. But in those areas of the film surface where the molecular concentration is sparse, the moisture-blocking capacity is inadequate to properly reduce the moisture loss through those stomas covered by this portion of the film. Furthermore, this weak portion of the film will crack and peel, thus negating the effectiveness of the entire film.

But PBI/Gordon researchers have found that the answer to this problem is to intermix emulsifiable oxidized polyethylenes having a molecular weight in the range of 1,000 to 3,400, and selectively constituted polyterpenes having molecular weights in the range of 270 to 1,800.

In this procedure a synergism occurs that results in a homogenous, uniformly dense film that reduces water loss through all of the stomas covered by the film, and that also resists cracking and peeling, stays flexible and sticky for up to twice as long as conventional anti-transpirants. Furthermore, it produces a glisten and luster that gives plants a beautiful, radiant sheen.

A Transfilm test

When you get your sample of Transfilm, we'd like to suggest that you test three identical potted plants. Water them all to capacity; spray one with Transfilm; one with whatever brand of anti-transpirant you have been using; use the third as a check.

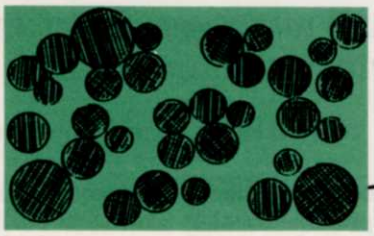
You'll be amazed by how much longer the Transfilm-treated plant stays healthy without any further water.

For your sample of Transfilm
Call Toll-free 1-800-821-7925
In Missouri 1-800-892-7281

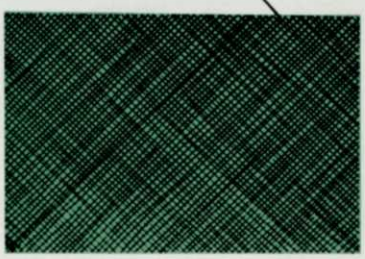
When we send your sample, we will also send you a $10.00 rebate coupon.

Samples available only while supply lasts.
Transfilm® is a registered trademark of PBI/Gordon Corporation.
©1988, PBI/Gordon Corporation.

Schematic drawings show why Transfilm is more effective in reducing water loss.



Schematic enlargement of a segment of conventional anti-transpirant film shows how polyterpene molecules gather in clusters. In those areas of the film where molecular concentration is sparse, the film does not give adequate protection against moisture loss. Furthermore, those weak spots tend to crack and peel.



Schematic enlargement of a segment of Transfilm shows how the patented intermixture of polyterpenes and polyethylenes forms a homogenous, uniformly dense film that *does* give adequate protection against moisture loss. Furthermore, it does not crack or peel, and thus lasts up to twice as long.

A user's experience with Transfilm

"We recently discovered your product TRANSFILM and believe it's the best product for protection from excessive transpiration we've ever seen.

"We used it on some large trees we moved to a trade show in Dallas. They looked so good that lots of people, including other growers, asked how we got them there in such great shape. TRANSFILM was our answer."

BUD DEKE
Manager, Florey Tree Farm
Wills Point, Texas

pbi/gordon corporation
1217 WEST 12th STREET
P.O. BOX 4090
KANSAS CITY, MISSOURI 64101

TRANSFILM®

ANTI-TRANSPIRANT
677-788

Circle No. 136 on Reader Inquiry Card

COVER STORY

BLENDING TO PLEASE

With so many blends and mixes available, finding the right seed for a particular growing situation is easier than ever before.

by Will Perry, managing editor

The 1988 seed supply will have no less than 80 blends and mixes in its ranks. It is an impressive number that bears witness to the industry's marketing and research prowess and the increasing sophistication of seed users.

Seed blends—a combination of two or more varieties of the same cultivar—and mixes—where different cultivars are united—offer the landscaper several advantages over using a single seed. Different varieties have certain strengths and weaknesses, but by mixing two (or three),

continued on page 26

SEED BLENDS

Variety	Marketer	Ingredients	Adaptability
Bent Blend	Lesco	25% Penncross, 25% Penneagle and 50% common creeping bentgrasses	Greens
CBS II	Turf-Seed	Blend of Citation II, Birdie II and Omega II Perennial ryegrasses	Home lawns Parks Golf courses
Derby Regal	International Seeds	50% Derby and 50% Regal perennial ryegrasses	Overseeding Golf courses
Dixie Green tall fescue	International Seeds	An equal blend of Pacer, Houndog and Mojave tall fescues	Roughs Parks Wherever permanent turf desired
Double Eagle Blend (CBS II)	Lesco	Contains Citation II, Birdie II and Omega II perennial ryegrasses	High traffic areas Southern overseeding
Eagle Blend	Lesco	Contains Commander, Manhattan II and Regency perennial ryegrasses	High traffic areas
Eagle Blend I	Lesco	Contains Commander, Vintage or Regency perennial ryegrasses	Greens Tees Fairways
Fourstar Sod Blend	Lofts	A blend of Baron, Ram I, Glade and Nassau Kentucky bluegrasses	Sod
Fun Lawn	Jonathan Green	40% Bonanza, 30% Fine Lawn I and 30% Mustang turf-type tall fescues	Roughs
Futura Plus	Pickseed West	50% Fiesta 25% Blazer 25% Dasher perennial ryegrasses	
Futura 2000	Pickseed West	Blend of Fiesta II, Dasher II and Blazer perennial ryegrasses	Wherever a Perennial ryegrass is recommended
Marvelgreen Supreme	Lofts	50% Palmer perennial, 30% Prelude perennial and 20% Yorktown II perennial ryegrass	Southern overseeding blend
Par Blend	Lesco	40% Vintage 2df, 30% Regency and 30% Transfar intermediate ryegrass	Tees and collars Fairways
PhD	International Seeds	40% Derby, 40% Regal and 20% Gator perennial ryegrasses	Overseeding Golf courses
Premium Sod Blend	Northrup King	25% Aspen 25% Glade 25% Trenton and 25% Rugby Kentucky bluegrasses	Sod
Proform Sod Blue Blend	Garfield Williamson	20% Eclipse 25% Classic 20% Liberty 20% Challenger and 20% Touchdown Kentucky bluegrasses	Sod or turf repair
Proform Triple Classic	Garfield Williamson	50% Omega II, 25% Saturn and 25% Manhattan II perennial ryegrasses	Overseeding Golf courses Athletic fields
Quality Blue Blend	Lesco	A 25% blend of any of the following Kentucky bluegrasses: Julai, Dawn, Challenger, Merit, Columbia or Midnight	Sod Premium turf areas
Quartet	Van Der Have Oregon, Inc.	A blend of Pennfine, Brenda, Patriot and Mondial perennial ryegrasses	Greens

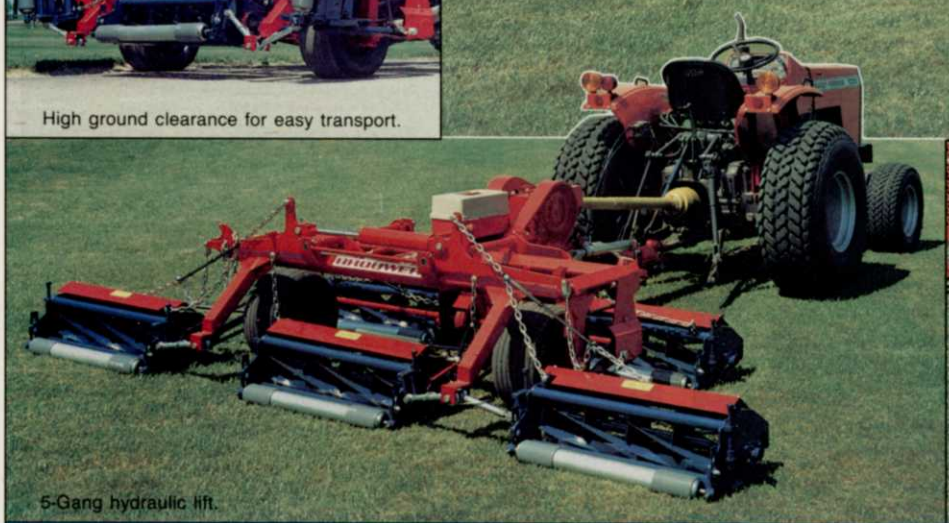
Variety	Marketer	Ingredients	Adaptability
Sodmaker	Jonathan Green	40% Merit, 20% Classic, 20% Density and 20% Gnome Kentucky bluegrasses	Sod Tees and Fairways
Spectrum	Turf Merchants	An equal blend of Patriot, Manhatten II and Pennfine perennial ryegrasses	Southern overseeding and permanent grass in the northeast
Sports Turf	O.M. Scott	60% Loretta and Pennant perennial ryegrasses and 40% Victa and Abbey Kentucky bluegrasses	Athletic fields High traffic areas Parks/Schools
Team	Pickseed West	Blend of Mustang, Maverick and Thoroughbred turf-type tall fescues	Home lawns Parks Athletic fields
Touch-up	Jonathan Green	40% Allaire, 30% Manhattan II and 30% Fiesta perennial ryegrasses	Home lawn overseeding Tees/Fairways/ Roughs
Transition Blend	Lesco	Contains the following turf-type Tall fescues: Cimarron, Bonanza, Trailblazer or Apache	Designed for transition zone
Triathalawn	Turf-Seed	Blend of Apache, Bonanza, Falcon and Olympic tall fescues	Home lawns Sod Golf courses Athletic fields
Triple Play	Fine Lawn	An equal blend of Pennant, Manhattan II and Pennfine perennial ryegrasses	Overseeding of golf courses in the south Wherever ryegrass desired
Triple Pro Blend	Northrup King	34% Galway 33% Falcon 33% Arid turf-type tall fescues	Sod in the south and west coast
Tri-plex Bluegrass	Lofts	Mixture of Nassau, Ram I, Georgetown and Baron	For full sun areas
Tri-plex General	Lofts	60% Nassau bluegrass, 20% Jamestown chewings fescue and 20% Palmer perennial ryegrass	For full sun areas
Tri-plex Ryegrass	Lofts	A mixture of Prelude, Palmer and Cowboy	
Tri-plex Shade	Lofts	40% Ram I Kentucky bluegrass, 40% Jamestown chewings fescue and 20% Palmer perennial ryegrass	
True Blue	Turf Merchants	An equal blend of Gnome, Merit and Baron Kentucky bluegrasses	Landscaping
Tuf Gem II	Turf Merchants	An equal blend of Bonanza, Apache and Brookston tall fescues	Permanent use
Turf Mate Elite Dwarf	Turf Merchants	An equal blend of Trailblazer and Wrangler tall Fescuses	Permanent use
Victa Bristol Merit	O.M. Scott	A blend of Victa, Bristol and Merit Kentucky bluegrasses	Home lawns
VIP	Turf Merchants	An equal blend of Manhattan II, Pennant and Pennifine perennial ryegrasses	Southern overseeding, permanent turf in the northeast
VIP Bentgrass Blend	Turf Merchants	A blend of Seaside, Penncross and Penneagle bentgrasses	Southern overseeding, permanent turf in the northeast

chart continued on page 28

get the *edge* with a BROUWER MOWER

High ground clearance for easy transport.

7-Gang hydraulic lift.



5-Gang hydraulic lift.

Tractor track removal brush.

Now with many new outstanding features . . . the Brouwer P.T.O. mowers are designed to produce the highest quality cut, no matter what the conditions, no matter the season. Wet grass, dry grass, short or heavy grass, Brouwer high capacity mowers can cut-it. Ruggedly built from quality materials the 5 or 7 gang units promise season after season of economical reliable service with outstanding performance, less horsepower requirements, less tractor fuel consumption and less compaction. Check the option packages that include Tractor Track Removal Brush; Quick Height of Cut Adjuster; Backlapper; Ball Hitch; Highway Tires and many more that allow you to customize a mower to suit your particular conditions and requirements. Also available are the Fairway Models with floating heads and front rollers for a perfect short cut on undulating fairways.

Put it all together and it adds up to dollar sense. Can you afford not to buy a Brouwer?

FEATURES:

- Rugged frame of lightweight high-strength structural steel
- High ground clearance for maneuverability around obstacles and over curbs
- Terra-tires or highway tires for maximum flotation or transportation
- Hydraulic or manual lift for easy transport
- Optional four, five, six or seven bladed reels
- P.T.O. driven with a proven V-belt drive system

BROUWER
TURF EQUIPMENT LIMITED
An Outboard Marine Corporation Company

7320 Haggerty Rd./Canton, MI. 48187 Telephone (313) 459-3700
Woodbine Avenue/Keswick, Ontario, Canada L4P 3E9 Telex 065-24161 Telephone: (416) 476-4311

86-59

Circle No. 102 on Reader Inquiry Card

SEED MIXES

Variety	Marketer	Ingredients	Adaptability
Athletic Field Mix	Lofts	80% Rebel or Clemfine tall fescue 10% Palmer perennial ryegrass 10% Nassau or Baron Kentucky bluegrass	Athletic fields
Athletic Pro Mix	Northrup King	25% Aspen and 25% Adelphi Kentucky bluegrass with 50% Delray perennial ryegrass	Athletic field renovation Poa Annua control
Athletic Pro II Mix	Northrup King	25% Rugby and 25% Trenton Kentucky bluegrasses with 25% Delray and 25% Caddie perennial ryegrasses	Overseeding of high wear areas Athletic fields Fairways
Blue-Rye	Jonathan Green	30% Allaire perennial ryegrass 25% Classic, 25% Gnome and 20% Merit Kentucky bluegrass	Home lawns Tees/Fairways/ Roughs
Boulevard Mixture	Northrup King	30% 'Fults' 30% Dawson red fescue 30% Park Kentucky bluegrass and 10% Delray perennial ryegrass	Areas of chronic salt accumulation
Companion	International Seeds	80% Elka perennial ryegrass 20% Ensylva creeping red fescue	Vineyards Shaded areas
Contractor's	Jonathan Green	50% annual ryegrass 35% perennial ryegrass 10% creeping red fescue and 5% Kentucky bluegrass	Initial seeding
Dense Shade	Jonathan Green	35% Victory chewings fescue 30% Pennlawn creeping red fescue 20% Glade and 15% Gnome Kentucky bluegrasses	Home lawns with little sun
Dixie Green	International Seeds	70% Derby perennial ryegrass with 30% Highlight chewings fescue	Golf courses (in southeast) Shaded areas
Drought Tough	Jonathan Green	30% Arid, 30% Bonanza and 30% Mustang tall fescue with 10% Gnome Kentucky bluegrass	Home lawns
Ecology	Lofts	80% Reliant hard fescue 20% Jamestown chewings fescue	For ecologically fragile sites where fertilizers are banned. Low maintenance areas
Fast Grow	Jonathan Green	50% Linn perennial ryegrass 20% Kentucky bluegrass 15% Annual ryegrass and 15% creeping red fescue	Roughs
Full Sun	Jonathan Green	30% Gnome Kentucky bluegrass 20% Allaire and 20% Manhattan II perennial ryegrass 15% Victory chewings fescue and 15% Pennlawn creeping Red fescue	Home lawn Fairways and roughs
Futura Blue	Pickseed West	20% Touchdown Kentucky bluegrass 20% America Kentucky Bluegrass 15% Agram chewings fescue 45% Fiesta perennial ryegrass	
General Turf Mixture	Northrup King	15% Park 35% Kentucky bluegrass 85/80 with 40% creeping red fescue and 10% perennial ryegrass	Schools Parks Cemeteries Rights-of-way
Heavy Traffic Mixture	Jonathan Green	45% Bonanza, 40% Mustang turf-type tall fescues and 15% Allaire perennial ryegrass	Roughs
Landscape Pro Mix	Northrup King	30% Park and 20% Parade Kentucky bluegrasses with 20% Delray perennial ryegrass and 30% Ruby creeping red fescue	Initial turf establishment
Marvelgreen and Laser	Lofts	85% Marvelgreen Supreme 15% Laser poa trivialis	Wherever a fine texture desired Southern overseeding blend
Marvelgreen Classic	Lofts	60% Palmer perennial ryegrass 20% Jamestown chewings fescue 20% Laser poa trivialis	Greens/Tees Shaded areas Southern overseeding blend
Marvelgreen Sports Mix	Lofts	A mixture of fine leaf turf type ryegrasses with annual ryegrass	Fairways/tees Athletic Fields Overseeding blend
Marvelgreen 3+1	Lofts	75% Marvelgreen Supreme 25% Jamestown chewings fescue	Southern overseeding blend
Maxi-Gain Green Chop	Turf-Seed, Inc.	(approximately) 43% Latar orchardgrass 22% Barpastra tetraploid perennial ryegrass 14% Tandem festulolium 11% TT-80 tetraploid Annula ryegrass 5% New Zealand white clover and the rest other crop seed and inert matter	Pastures
Medalist North	Northrup King	35% Delray and 35% Caddie perennial ryegrasses with 15% Trenton and 15% Rugby Kentucky bluegrasses	Renovation of worn areas Athletic fields
Overseeder II	Northrup King	25% Trenton, 25% Aspen and 20% Rugby Kentucky bluegrasses with 15% Delray and 15% Caddie perennial ryegrasses	Fairway renovation Home lawns
Pasture	Jonathan Green	40% perennial ryegrass 25% Kentucky bluegrass 15% orchard grass 15% timothy and 5% Ladino clover	Paddock mixture
Premier Turf Mix	Northrup King	25% Rugby, 20% Adelphi and 20% Trenton Kentucky bluegrasses with 25% Scaldis hard fescue and 10% Delray perennial ryegrass	Home lawns Fairways
Proform Deep Shade Mix	Garfield Williamson	35% Ensylva and 15% Shadow chewings fescues with 30% Omega II perennial ryegrass 10% Aurora hard fescue 5% Eclipse Kentucky bluegrass and 5% Sabre poa trivialis	Dry and damp shaded areas or areas with up to 70% shade
Proform Sports Turf	Garfield Williamson	60% Jaguar and 18% Bonanza turf-type tall fescues 15% Omega II perennial ryegrass and 7% Liberty Kentucky bluegrass	Parks Cemeteries Athletic fields
Shady Turf	Northrup King	15% Nugget and 25% Glade Kentucky bluegrasses with 10% Delray perennial ryegrass and 25% Scaldis hard fescue	New seedings Overseeding of shaded areas
Show Lawn	Jonathan Green	40% Allaire and 30% Premier perennial ryegrasses, 10% Density, 10% Gnome and 10% Merit Kentucky bluegrasses	Home Lawns Athletic Fields Tees/Fairways/ Roughs
Special Park Mix	Northrup King	30% Aquila and 20% Park Kentucky bluegrass with 20% Ruby creeping red fescue, 20% Scaldis hard fescue and 10% Delray perennial ryegrass	Parks Low maintenance, shaded areas
Summer Stress	Lofts	90% Rebel or Rebel II turf-type tall fescue 10% Nassau or Baron Kentucky bluegrass	For transition zone fields subject to heat stress
Sun and Shade	Jonathan Green	20% Victory Chewings fescue 20% Allaire and 15% Manhattan II perennial ryegrass 20% Pennlawn red fescue 15% Glade and 10% Gnome Kentucky bluegrasses	Lawn areas with varying light Fairways and roughs
Super Pro III	Northrup King	15% Adelphi 15% Rugby Kentucky bluegrasses and 35% Pennfine 35% Delray perennial ryegrasses	Overseeding of heavy traffic areas in far north
Survivor	Seed Research of Oregon	90% Tridnet and Falcon tall fescues, 10% SR 3000 hard fescue	Home lawns Athletic fields Parks Sod production Golf course roughs Industrial turf
Swift & Sure	Northrup King	15% Parade and 15% Park Kentucky bluegrasses with 30% Pennlawn creeping red fescue 20% Pennfine and 20% Delray perennial ryegrasses	Overseeding established areas
Trophy	Seed Research of Oregon	80% Trident and Falcon tall fescue 10% SR 3000 hard fescue 10% Merit Kentucky bluegrass	Home lawns Athletic fields Parks Sod Golf course roughs Industrial turf
Turf Supreme	Lofts	80% Nassau Kentucky bluegrass 20% Palmer perennial ryegrass	
Utility Mixture	O.M. Scott	30% Red fescue 55% Ovation and Derby perennial ryegrasses 15% Victa Kentucky bluegrass	Low maintenance turf areas
Veri-Green	Jonathan Green	60% Annual ryegrass 20% Linn perennial ryegrass 10% Kentucky bluegrass 10% creeping red fescue	Bare spots Roughs
Winter Turf I	O.M. Scott	90% blend of Loretta, Derby, Ovation and Victa perennial ryegrasses 10% Kentucky bluegrass	Overseeding of Bermudagrass
Winter Turf V	O.M. Scott	85% Loretta and Ovation perennial ryegrasses and 15% Sabre poa trivialis	Overseeding

you can build a better turf.

Such is the case with perennial ryegrass and Kentucky bluegrass. Ryegrass, burdened by a slow recovery rate, is enhanced by the strong recovery rate of the Kentucky bluegrass, which benefits from the other's wear tolerance.

Blends and mixes are created to maximize disease resistance, improve turf color, density, hardiness and several other reasons.

The benefits

"We feel the more genetic diversity in a mix or blend, the better off you are," says Virgil Meyer, Ph.D. at O.M. Scott. "Blends and mixtures tend to show off the best qualities of each variety. Likewise, the weaknesses of each are passed

Great performance for an active America

LIBERTY

KENTUCKY BLUEGRASS

America's new lifestyle is **active** and new Liberty Kentucky Bluegrass can take the action. Why? Because it's tough and aggressive. Liberty performs well with little maintenance...resists pests and tillers freely...has a dwarf growth habit...and best of all, is economical. It greens up early in Spring and stays dark green later into Fall with no purple coloring. Ideal for sod, sports turf, parks and the above-average home lawn. Liberty is **basic** to every seed mixture. America, just when you need it most, you've got Liberty.

For information and the distributor nearest you contact: Garfield Williamson, Inc.
Fairfield, NJ 07006
201-882-7755

Circle No. 114 on Reader Inquiry Card

SEED BLENDS

Variety	Marketer	Ingredients	Adaptability
Renovator Pro Blend	Northrup King	40% Delray 30% Caddie and 30% Pennfine Perennial ryegrass	Heavy traffic areas Athletic fields Playgrounds
Ryegrass 100	O.M. Scott	50% Pennant 30% Derby 20% Ovation perennial ryegrasses	Athletic fields Southern overseeding
Winter Turf III	O.M. Scott	70% Caravelle 20% Pennant 10% Derby perennial ryegrasses	Overseeding
Winter Turf IX	O.M. Scott	40% Caravelle 40% Manhattan II and 20% Pennant perennial ryegrasses	Overseeding

over. From the professional standpoint, blending and mixing take a lot of the guesswork and trouble out of turf management."

There are certain advantages and disadvantages to blending different types of grass. Tall fescue is the "new darling" of the turf industry, says Tom Voigt, assistant horticulturist at the University of Illinois, Urbana. Turf-type tall fescue is a variety that lends itself well to blending. Because of its average cultural intensity level, deep roots and germination rate, a mix of 90% tall fescue and 10% Kentucky bluegrass will offer a more wear tolerant, thicker turf that will do well in the late months of the cold season, Voigt notes.

On the other hand, perennial ryegrasses are less likely to offer an advantage when blended, says John P. DeMatteo, a turfgrass agronomist with Lofts Seed, Inc. All varieties of perennial ryegrass share similar characteristics and come from limited parentage, says DeMatteo. Therefore, blending is not likely to do more than make you pay a few extra cents per pound for your seed.

A perennial ryegrass mix however, does work well because it establishes quickly and therefore chokes off *Poa annua*, is often endophyte enhanced and has a nice color.

Blue blends

Kentucky bluegrass is a cultivar you should consider blending, adds Dematteo. When planted alone, the grass is likely to develop disease problems. However, since each variety offers unique characteristics, they can be combined to provide a healthy turf. An excellent blend is Merion, Ram I and Georgetown which gives landscapers the turf needed to endure high traffic, reduce maintenance and establish quickly.

Other reasons for blending and mixing might be that "people simply don't want to put all their eggs in one basket," adds Pickseed West resesarcher Jerry Pepin, Ph.D. "It's as much a psychological boost as anything else."

Whatever your reason, before shopping for a blend or mix it's best to know as much as possible about the area to be seeded. How much maintenance will you be putting into the turf? How low will you be mowing? Will the field be irrigated? How often? Is there a disease or insect control problem in the area?

With the wealth of blends and mixes available, you're likely to find a seed that matches your situation well, so take the time to figure out exactly what you need before you make your deal. **LM**

TURF VAC® sweeps both turf and pavement

The only sweepers with unique all-vacuum design that operate on both turf or pavement, wet or dry. Safe, powerful air picks up bottles, cans, as well as fine clippings to reduce thatch build-up.

- Sweeping widths from 4′ to 30′.
- 6″ × 10′ hand intake hose available.
- Hard surface filtration.
- No fingers or brushes to wear out—picks up by air only.
- Ground dump & power lift dump.
- Tow type or self-propelled.
- PTO models available.

Write for brochures/distributor in your area.

TURF VAC CORPORATION
15701 Graham Street,
Huntington Beach, CA 92649
Telephone: (714) 898-9382

MODEL RMB. Rear Mounted Blower. Fits any Category 1 or 2 3-Pt. hitch tractor. Easy on-the-go left/right/rear discharge control. Handles almost all turf or pavement clean-up jobs.

MODEL FMB
Front-mounted blower. Easy manual control of left/right/front on-the-go discharge.

COREMASTER CM-4
Designed to lift sand cores off golf greens and tees without disturbing grass. Sweeps 48" wide.

MODEL FM5-LD
5 cubic yard hopper lifts to dump at 96". Smooth vacuum action sweeps 60" wide.

For the long run.

Introducing a powerful new force in riding rotary mowers.

Now there's more to Cushman® Front Line® Mowers than top cutting performance. More power. More operator comfort. More endurance.

Now there's the new diesel-powered model Cushman 807.

Its totally integrated power train and new hydraulically-powered steering gives you unmatched performance over the long run. The 807 dispatches thick, wet grass on tricky maneuvers around obstacles without losing ground speed. No other rotary mower gives you a cleaner cut.

At the heart of the new, four-wheel 807 is a powerful 21.5 horsepower, 3-cylinder Kubota 950 diesel engine. We've also included a heavy-duty Donaldson air cleaner and a new, heavy-duty Cushman PTO clutch to keep your new Cushman Front Line running longer. A complete family of Cushman Front Lines and a wide range of accessories are available to meet all your needs all year 'round. Choose a 3 or 4 wheel design with 60- or 72-inch side or rear discharge mower deck. Or add the exclusive Cushman Grass Caddy™ system, which lets you cut, catch, and hydraulically dump 16 bushels of clippings without leaving the seat.

For a convincing demonstration contact your Cushman dealer today. Or call toll-free: 1-800-228-4444.

CUSHMAN®

BUILT TO LAST

3307 Cushman, OMC-Lincoln, P.O. Box 82409, Lincoln, NE 68501

© Outboard Marine Corporation, 1987. All rights reserved.

Circle No. 106 on Reader Inquiry Card

BOOKSTORE

010 - ADVANCES IN TURFGRASS PATHOLOGY
by Joyner and Larsen
Leading U.S. turf pathologists report on turfgrass diseases, pythium blight, snow molds, fairy rings, leaf spot of Kentucky bluegrass in Minnesota, initial and field fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **$27.95**

220 - CONTROLLING TURFGRASS PESTS
by Shurtleff, Fermanian, Randell
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. Covers weeds, insects, animal pests and diseases in detail. Also provides information on cultural management practices: the establishment, care and renovation of low-, medium-, and high-maintenance turf areas. 50 color and 400 black and white photographs. **$32.00**

230 - LAWNS-Third Edition
by Dr. Jonas Vengris and Dr. William A. Torello
Designed as a textbook or a practical usage manual, this book has been completely brought up-to-date. Care of lawns and turfgrass, from selection of varieties to maintenance of established grass is completely covered. **$25.95**

645 - MANAGEMENT OF TURFGRASS DISEASES
by J.M. Vargas
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, illustrated. **$26.70**

640 - TURF IRRIGATION MANUAL
by James Watkins
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **$26.55**

225 - TURFGRASS MANAGEMENT
by A.J. Turgeon
Revised edition. Covers the latest developments in turfgrass science and technology. Heavily illustrated with dozens of new drawings. Provides specific recommendations for applying the newest pesticides, fertilizers and other materials to combat turfgrass problems. A valuable reference for diagnosing problems and determining their causes. **$39.33**

615 - TURF MANAGEMENT FOR GOLF COURSES
by James Beard
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **$52.75**

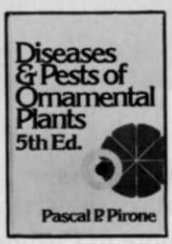
620 - TURF MANAGEMENT HANDBOOK
by Howard Sprague
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **$25.25**

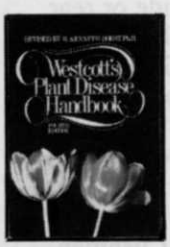
110 - TURF MANAGERS' HANDBOOK Second Edition
by Daniel and Freeborg
ENTIRELY UPDATED. A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. Offers recommendations for effective turf protection through integrated pest management. Included are alternate plans for providing and improving safe, uniform turfgrass for sports fields. Outline format plus newly added index make this new edition easier to use and a more comprehensive approach to turfgrass science. **$32.95**

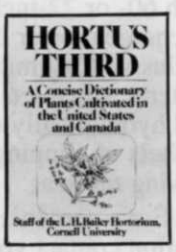
630 - TURFGRASS: SCIENCE AND CULTURE
by James Beard
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **$39.00**

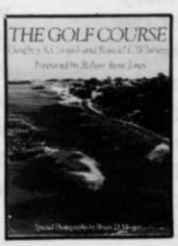
410 - DISEASES & PESTS OF ORNAMENTAL PLANTS
by Pascal Pirone
This standard reference discusses diagnosis and treatment of diseases and organisms affecting nearly 500 varieties of ornamental plants grown outdoors, under glass or in the home. Easy to understand explanations of when and how to use the most effective fungicides, insecticides and other control methods. **$36.50**

690 - INSECTS THAT FEED ON TREES AND SHRUBS
by Johnson and Lyon
Essential information for identifying more than 650 insect pests and the injuries they cause. More than 200 color illustrations. **$49.50**









570 - WESTCOTT'S PLANT DISEASE HANDBOOK
by Kenneth Horst
This fourth edition offers professionals the latest diagnostic and disease control information. Plant entries designed to simplify diagnosis, plus background on the classification of plant pathogens. This handbook gives a specific description of each disease, susceptible plants, specific symptoms of the disease, reported locations and control measures for each disease and their side effects. **$43.95**

510 - HORTUS THIRD
from Cornell University
A 1,300 page concise dictionary of plants cultivated in the United States and Canada. A reference which every horticulture professional should have. **$125.00**

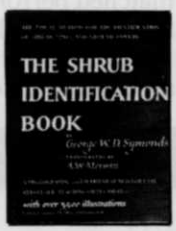
800 - THE GOLF COURSE
by Cornish and Whitten
The first book ever to give the art of golf course design its due, and golf course architects the credit and recognition they deserve. 320 pages and 150 color and black and white photographs. Traces the history and evolution of the golf course, analyzes the great courses, shows how they were designed and constructed. **$35.00**

665 - ARBORICULTURE: THE CARE OF TREES, SHRUBS AND VINES IN THE LANDSCAPE
by Richard W. Harris
Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **$52.00**

410 - NATIVE TREES, SHRUBS, AND VINES FOR URBAN AND RURAL AMERICA
by Gary L. Hightshoe
This award-winning reference to native U.S. plants has now been expanded to include shrubs and vines. Over 250 major species are characterized by form, branching pattern, foliage, flower, fruits, habitat, soil, hardiness, susceptibility, urban tolerance and associate species. Includes unique color-coded keys that classify plant species by visual characteristics, cultural requirements and ecological relationships. **$79.95**

720 - SHRUB IDENTIFICATION
by George Symonds
Pictorial key to identify shrubs. Contains more than 3,500 illustrations to check specimens. Popular and botanical names are given for each shrub and handy index tabs for quick reference.
$12.95

Native Trees, Shrubs and Vines for Urban and Rural America
A Planting Design Manual for Environmental Designers
Gary L. Hightshoe

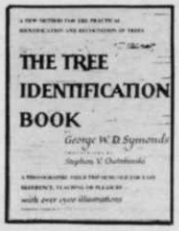


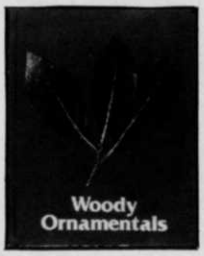
BOOKSTORE

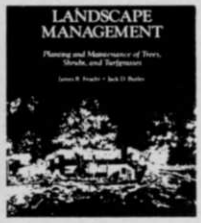
750 - TREE IDENTIFICATION
by George Symonds
Pictorial reference to identifying trees by checking leaves, buds, branches, fruit and bark. Like its sister publication. SHRUB IDENTIFICATION, popular and botanical names are listed with index tabs for easy reference.
$14.95

760 - TREE MAINTENANCE
by Pascal Pirone
The fourth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **$49.95**

405 - WOODY ORNAMENTALS
by Partyka, Joyner, Rimelspach, Carver
Illustrates plant identification characteristics. Organized in two basic sections: plant identification and plant disorders, this text utilizes 430 color photos, 430 line drawings and 45 black and white photos to simplify identification.
$32.50







345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1988
Kathleen W. Kerr, Editor
An updated unit cost data reference for designers and cost estimators. Developed to fill the tremendous need for detailed landscape construction cost data. Laid out in easy-to-use CSI format. Annual.
$35.00

300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH
by Leroy Hannebaum
Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **$37.00**

305 - LANDSCAPE MANAGEMENT
by James R. Feucht and Jack D. Butler
Planting and Maintenance of Trees, Shrubs, and Turfgrasses. Describes the basic principles of cultural management of installed landscapes. The important factors of plant growth, soils and fertilizers, improved planting techniques and new pruning techniques, integrated pest and disease management, and spray-equipment calibration and care are all featured. **$29.95**

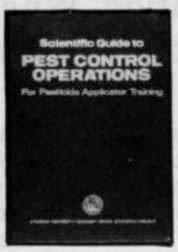
370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS
by Leroy Hannebaum
An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **$34.00**

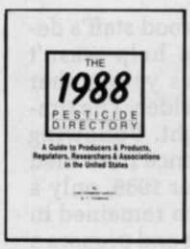
365 - LANDSCAPE PLANTS IN DESIGN
by Edward C. Martin
An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in nontechnical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **$58.95**

375 - RESIDENTIAL LANDSCAPES
by Gregory M. Pierceall
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **$41.00**

565 - WEEDS
by Walter Muenscher
Second edition. Premier text for identification and basic natural history for weeds found in the continental United States and Canada. Ecological data on weed biology combined with excellent keys and plant descriptions make this an essential reference book.
$39.95

125 - SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS
by Truman, Bennett, Butts
Provides a sound basis for studying the technical aspects of pest control. Covers pesticides, safety, health and environmental concerns, equipment, flies and mosquitos, rats and mice, birds and much more. **$35.00**





500 - THE 1988 PESTICIDE DIRECTORY
by Lori Thomson Harvey and W.T. Thomson
A Guide to Producers and Products, Regulators, Researchers and Associations in the United States. For the person who needs to know anything in the United States pesticide industry. Includes Basic Manufacturers and Formulators with their products, key personnel, managers, district/regional offices and other pertinent information. For United States pesticide information in one place, this directory is a must.
$75.00

Mail this coupon to: Book Sales
Edgell Communications
One East First Street, Duluth, MN 55802

Name _____

Street Address _____

P.O. Box Number _____

City/State/Zip _____

Phone Number ( ) _____

Purchase Order Number _____

Signature _____ Date _____

Please send me the following books. I have enclosed payment* for the total amount.

Please charge to my Visa, MasterCard or American Express (circle one)

Account Number _____ Expiration Date _____

BOOK NUMBER AND TITLE	QUANTITY	PRICE	TOTAL PRICE

*Please add $3.00 per order plus $1.00 per additional copy for postage and handling.

_____ (postage & handling)

Please allow 6-8 weeks for delivery.
Prices subject to change.
Quantity rates available on request.

Total Enclosed _____

LM

Besides traffic problems, the walkway between Brynwood's 14th and 15th holes suffered from bad drainage.

ARCHITECTS AS PROBLEM-SOLVERS

Brynwood Country Club needed a solution. Where did they go? To a local landscape architect. Today, club members are glad they did.

By the summer of 1986, the terms "muddy and unattractive" were the best anyone could apply to the route between Brynwood Country Club's 14th green and 15th tee. There was no defined cart path—just a mess where golfers had trekked.

The area also had drainage problems after rainfalls, which eventually led to a rutted path on this Milwaukee-area golf course. That's when Lied Buettner & Associates was called in.

"We realized we had to do something," remembers Steve Blendell, course superintendent, "and we knew we wanted to do it right. That is, in the most attractive way possible."

The in-house crew decided not to tackle the project itself.

"The job was just a bit more complex than it initially seemed," Blendell says. "We were looking at an overall distance of approximately 500 feet between the periphery of the green and the next hole.

"We felt this wasn't just a matter of planting a couple of shrubs. We envisioned changes in the terrain and integration of different types of landscaping ideas and knew the different grades would also present a problem," he remembers.

Additionally, Blendell points out, drainage problems would need tile work and grading problems required retaining walls.

Although the Brynwood staff's decision to seek outside help wasn't made lightly, there was yet another important factor to consider. The timing was extremely tight. Following their request for assistance from Lied Buettner in late October 1986, only a little more than a month remained in which to develop a plan and prepare a budget for the club's capital improve-

PROXOL®

When Surface Pests are at their worst, PROXOL® works best

Surface-feeding sod webworms, armyworms and cutworms don't stand a chance when PROXOL® 80SP is on the job. It's as easy to apply as a spray and has no unpleasant odor.

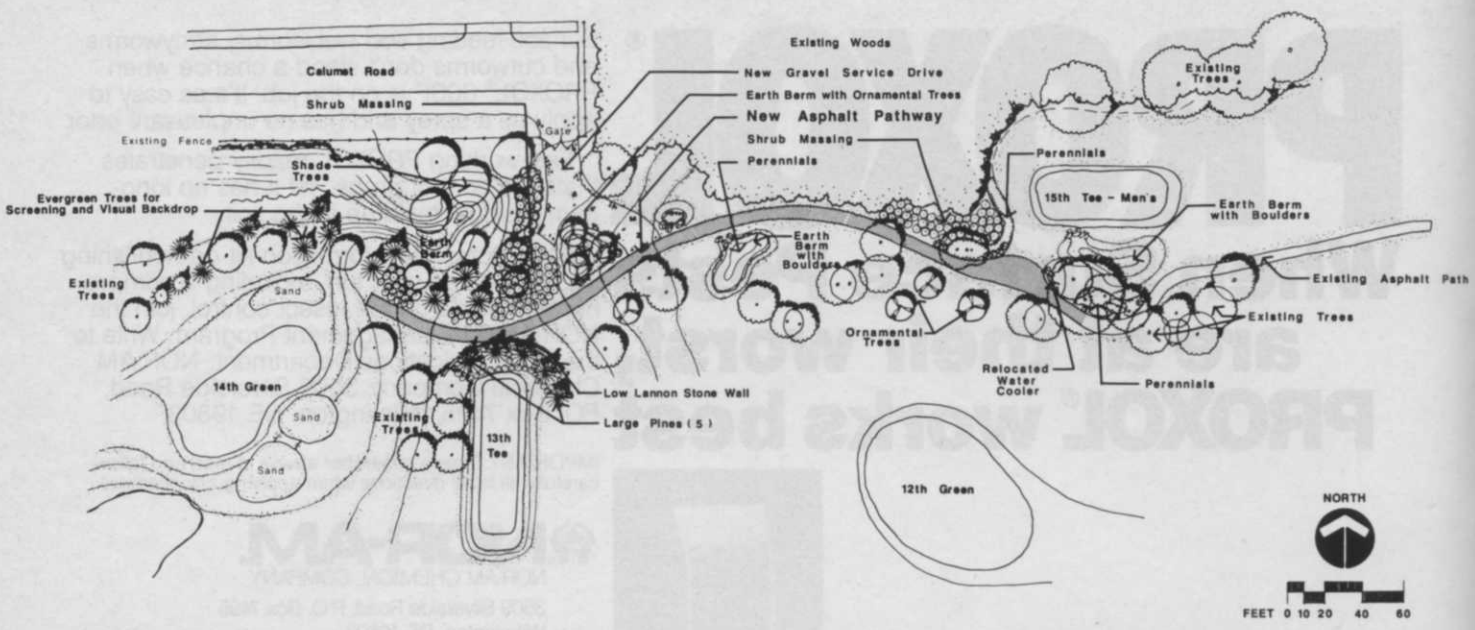
Fast-working PROXOL readily penetrates thatch to control grubs. Yet it has no long-term residual build-up in the soil.

For a complete information kit on nourishing and protecting your turf, including a comprehensive guide on turf insect control, join the NOR-AM Turf Management Program. Write to the Communications Department, NOR-AM Chemical Company, 3509 Silverside Road, P.O. Box 7495, Wilmington, DE 19803.

IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical.

NOR-AM®
NOR-AM CHEMICAL COMPANY
3509 Silverside Road, P.O. Box 7495
Wilmington, DE 19803

Circle No. 133 on Reader Inquiry Card



The landscape plan used logs and boulders to prevent carts from wandering onto other parts of the course.

ment budget meeting.

Enter Buettner

Blendell, who was familiar with the work and reputation of Dennis Buettner, called in the principal planner and landscape architect for Lied Buettner & Associates Land Planning of nearby Sussex, Wis.

Why a landscape architect or even a land planner for a project like this?

"A landscape architect frequently gets involved when a presentation must be made to an approval body," Buettner explains. "Implementation can usually be accomplished by the grounds staff, but the professionally-developed landscape plan provides the budgetary rationale required to get the project approved in the first place."

Buettner says using an outside consultant often helps diffuse internal politics and enhances the acceptability of a project when a committee has to justify expenditures to the membership. These recommendations to the budget committee are also backed by the reputation and experience of the professional landscape architect, who may even serve as a mediator of sorts. When called on, he or she can act as a facilitator between different points of view on budget committees or boards of directors.

Blendell, Buettner and Brynwood general manager Norman Eckstaedt made the initial presentation. The landscape committee in turn presented it to the capital budget committee. Both groups approved the plan.

The solution

Buettner's recommendations began with drawings showing a curvi-linear paved cart path, the use of which would be reinforced by berms and plantings designed to keep carts on the path and prevent shortcuts.

"What we wanted to do," Buettner says, "was to create an attractive 'obstacle course,' so to speak. We intended to channel golfers along the path through the use of landscaping."

The landscape plan (see diagram) used logs and boulders to prevent carts from wandering onto other parts of the course. Where the path curved in two points, small hills or berms would contain golfers and prevent shortcuts from those points.

> *'We wanted the cart path to be a pleasant experience that would keep people's interests and entertain them.'*
>
> *—Steve Blendell*

"Lied Buettner succeeded very well in focusing attention on the different landscape techniques we used," Blendell says. "Especially considering the length involved, we wanted the cart path to be a pleasant experience that would keep people's interests and entertain them rather than just being a straight walk from one green to the next tee.

"There's no doubt that this project also added to the overall beauty of the course," he adds.

In addition, Lied Buettner's plan provided for widening the cart path at the men's 15th tee and suggested relocation of the water cooler station there to make it more accessible to golfers.

Who does what?

While Lied's did a lot of the actual work once the ground was workable, the Brynwood staff also did part of it.

"Prior to taking this to the landscaping committee, we had already discussed with Dennis just what portions of the project Lied Buettner would handle and what could be done by our staff," Blendell explains. "We knew before we made the budget portion of our presentation approximately who would handle what."

The entire project, including Lied Buettner's planning fees, was in the neighborhood of $20,000, Blendell reports. That encompassed everything from asphalt and heavy equipment costs to the cost of tall landscaping materials and their planting.

Both Buettner and Blendell were pleased to find there were no major problems implementing the design, other than what Blendell calls the "usual weather problems—either it's too hot or too cold, too wet or too dry."

If anything, he recalled, what required the most effort was the need to carefully coordinate the work of the asphalt crew, the wall and drainage people, and those doing the planting work.

"Overall," Blendell says now, "I'd have to say we were generally very pleased with the project. What's most important to us is what our members' think and their reactions were very favorable.

"The feedback we got was that the new path was not only thoughtful and well-conceived, but equally well executed." **LM**

bobcat LOADERS

TAKE A TURN FOR THE BEST

Turn more production and return more profit to your landscaping business with a Bobcat 700 series skid-steer loader.

Designed with engineering excellence to turn in its own tracks for time-saving maneuverability. And featuring an impressive array of changeable attachments to handle almost any job.

The full Bobcat line features 15 model sizes, ranging from 600 lbs. up to 4,000 lbs. lift capacity to handle almost any size load.

The Bobcat skid-steer loader can turn in its own tracks.

Regardless of size, all Bobcats offer the same outstanding features. Agility in tight areas. Attachment versatility. Rugged durability. Easy maintenance and operation. Comfort and safety. Top performance in any work situation.

Bobcat also offers value. A Bobcat is well-built, and backed by a dealer service and parts network second to none. No matter where you put your Bobcat to work, there's a Bobcat dealer nearby with genuine Bobcat parts and service by factory-trained mechanics. In fact, Bobcats are so well-built and maintained that they keep their value at trade-in time, which gives you a big return on your initial investment.

Turn into your nearest Bobcat dealer today, and take a turn for the best in performance and value.

*Selected by Fortune Magazine as one of America's top 100 products.

Bobcat Builds America's Best*

Angle Broom	Backhoe & Rear Stabilizer	Combination Bucket	Earth Auger	Front Scarifier
Grader	Grapples and Forks	Hydraulic Breaker	Landscape Rake	Sweeper

Utility frame, three-point hitch, box scraper, york rake, trencher, Edwards mast, pallet fork, snowblade, tracks, vibratory roller and tree transplanter attachments are also available.

The Bobcat Commitment
TOTAL CUSTOMER SATISFACTION
bobcat
743
The 700 series features three models with a lift capacity up to 1300.

MELROE COMPANY

P.O. Box 6019 • Fargo, North Dakota 58108-6019

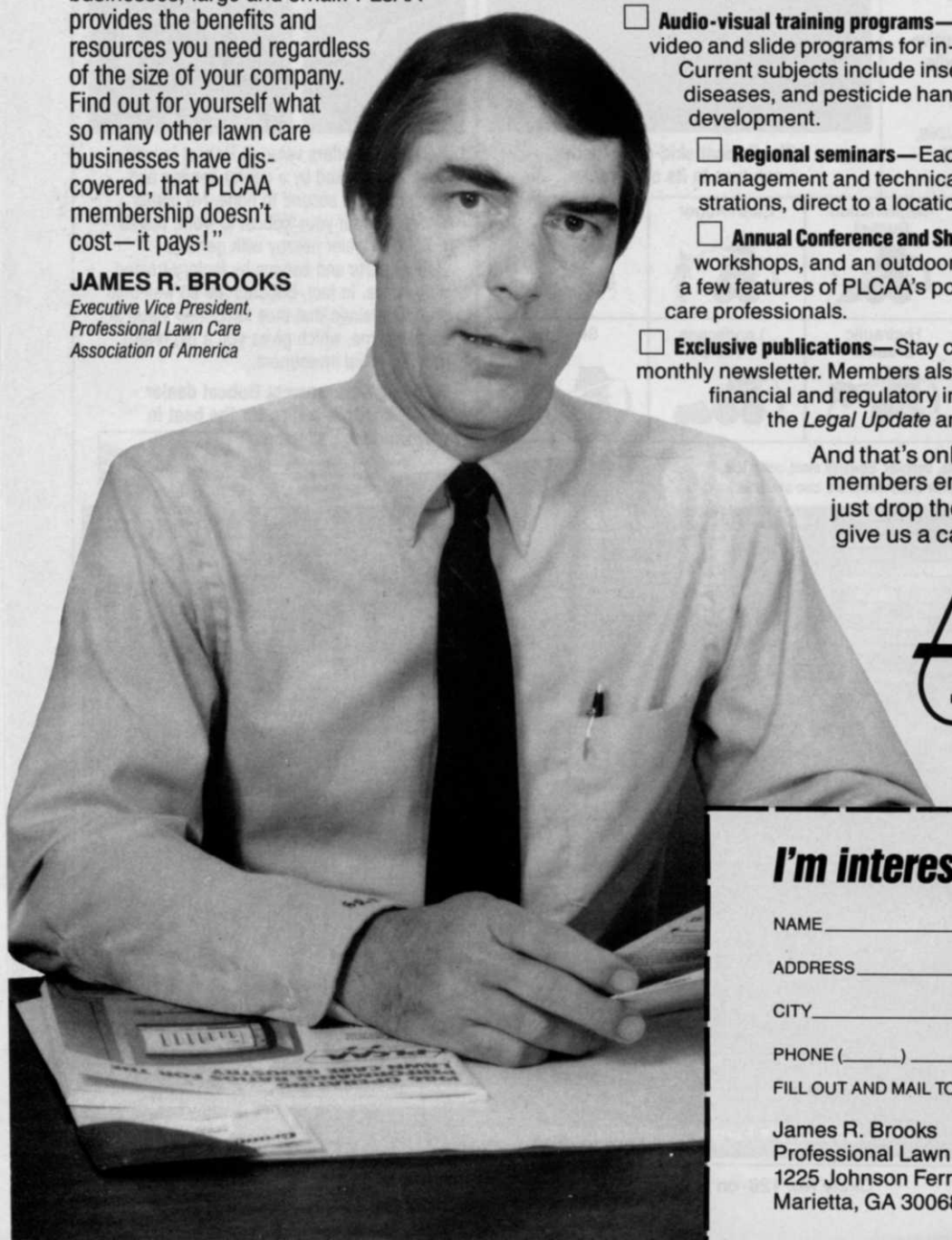
bobcat

"Now is not the time to go it alone."

"If you're like so many other lawn care companies, you have more than crabgrass to contend with. Sure, your sales are up—but so are your problems. Cash flow worries. The need for more employee training. The threat of growing regulation. The exploding costs of insurance and health benefits. These are only a few of the realities of running a lawn care business in the '80s.

That's where the Professional Lawn Care Association of America can help. PLCAA is the ProSource for over 1,000 businesses, large and small. PLCAA provides the benefits and resources you need regardless of the size of your company. Find out for yourself what so many other lawn care businesses have discovered, that PLCAA membership doesn't cost—it pays!"

JAMES R. BROOKS
Executive Vice President, Professional Lawn Care Association of America



Check the PLCAA benefits...

☐ **Technical Resource Manual**—Our 110-page resource guide for running a cost-effective, professional lawn care service.

☐ **PLCAA Safety Manual**—A step-by-step guide for training applicators and technicians.

☐ **Management Monograph Publications**—Booklets that cover critical business subjects like getting a loan, developing a marketing plan, hiring and firing practices, and more.

☐ **Group insurance and health care**—PLCAA offers health and life insurance plans for companies with as few as two employees—and at attractive group rates.

☐ **Collection services**—A results-producing collection service to help members with slow-paying accounts.

☐ **Audio-visual training programs**—Comprehensive, inexpensive video and slide programs for in-house training of your employees. Current subjects include insect and weed identification, turf diseases, and pesticide handling, with additional topics under development.

☐ **Regional seminars**—Each year PLCAA brings the latest in management and technical training, plus equipment demonstrations, direct to a location near you.

☐ **Annual Conference and Show**—Exhibits, educational sessions, workshops, and an outdoor equipment demonstration are just a few features of PLCAA's popular annual gathering of lawn care professionals.

☐ **Exclusive publications**—Stay current with *Turf Talks,* PLCAA's bimonthly newsletter. Members also keep in touch with tax, labor, financial and regulatory information through our periodicals, the *Legal Update* and *Environmental Update* bulletins.

And that's only part of the advantages PLCAA members enjoy. If you want to know more, just drop the coupon below in the mail, or give us a call at toll-free **1-800-458-3466.**

Symbol of Good Practice
PLCAA
PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA

I'm interested...tell me more!

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (_____) _____

FILL OUT AND MAIL TO:

James R. Brooks
Professional Lawn Care Association of America
1225 Johnson Ferry Rd., NE, Suite B 220,
Marietta, GA 30068

Overseeding?
put the seed where it belongs... in the soil, for perfect germination.

MODEL LOS24 OVERSEEDER

The Brouwer T.M. overseeder is a self propelled unit that is perfect for professional landscapers and lawncare businesses.

A proven Honda engine drives through a heavy duty chain and gear drive to give excellent traction. The unique 22 inch wide seeding system ensures better germination with minimum seed loss.

Available with easily fitted optional fertilizer hopper. Check below for more outstanding features.

- Powered blades cut adjustable depth grooves 2 1/2 in. apart.
- Calibrated seed flow through stainless steel slides.
- Proven, reliable 5 hp. engine.
- Offset discs to cover the seed.
- Fold-away operator handle for easy transport/storage.

Also available as Model LS24 seeder

The overseeding attachment is quickly and easily replaced by a trailing heavy-duty open mesh steel roller that covers the seed and firms down the soil.

Model LM67 Seeder

for larger areas...

The Lawnmaker 67 Seeder is a larger capacity seeder/fertilizer of rugged construction that is quick and easy to attach to any medium size tractor with a three-point-hitch. Heavy-duty adjustable teeth loosen the soil and an adjustable levelling bar smooths out uneven areas. The seed and fertilizer hopper bottoms and control slides are precision made in stainless steel for precise flow control, smooth operation and long life.

The unit is carried on two heavy-duty open mesh steel rollers that serve to cover the seed and firm the seed bed. Conveniently located controls give easy, comfortable operation. Designed for exceptional performance, the LM67 can seed up to 2 acres per hour.

So when you have large areas to be seeded in the minimum time and economically - put a Brouwer T.M. LM67 to work.

BROUWER
TURF EQUIPMENT LIMITED
An Outboard Marine Corporation Company

7320 Haggerty Rd./Canton, MI. 48187 Telephone (313) 459-3700
Woodbine Avenue/Keswick, Ontario, Canada L4P 3E9 Telex 065-24161 Telephone: (416) 476-4311

88-83

Circle No. 101 on Reader Inquiry Card

THE BLACK DEATH

Researchers agree on some curative methods for black layer on golf course greens, but they still don't seem to agree on all of the causes.

Turf researchers now agree that black layer on golf course greens can be dealt with.

Not long ago, it was thought the superintendent had to replace the green once the condition occurred. While this remains a viable—though expensive—option, principle researchers of the condition find that cultural practices can alleviate it.

Number one

Aeration is number one on the list. "I'm talking slicers, spikers—anything to break up the surfaces," notes John Hall III, Ph.D. at Virginia Tech University.

The condition apparently arises from a number of causes, but commonly from lack of oxygen combined with excess moisture. "The concern is that we have oxygen in the soil so it can breathe," Hall says.

Compaction, or layering related to the condition, is cured through coring. Regular aerators help, but deep aeration may be necessary to get through the layering. Judicious use of irrigation and fertilization also helps alleviate the effects.

Opinions vary on the causes, however. Here is what some researchers say:

Hall: "The pressure on (superintendents) has increased in recent years because of traffic on your courses. There were 25,000 to 30,000 rounds played per course in 1960; there were 65,000 to 70,000 per course in 1987. We have moved toward sandier media to reduce the amount of stress due to increased traffic."

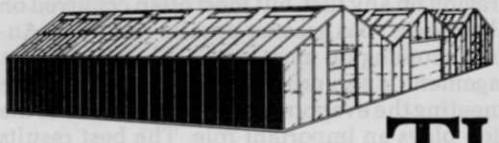
Hall has found these contributors to the condition: sulfur; blue-green algae; salinity greater than 10; podsolization (the maturing of intensely-managed soils through leaching of iron, aluminum and silicate compounds); silt and clay stratification; low phosphorous; high metal concentrations; and "chromatographic irrigation." He believes black layer is not a common problem.

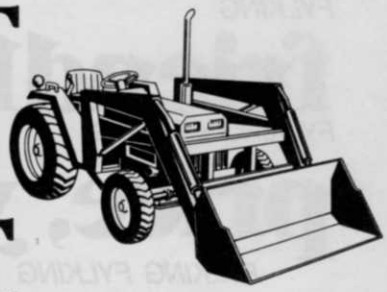
Clint Hodges, Ph.D., Iowa State University: "You don't have to have an anaerobic condition for the layer to start. But there is some component produced by the algae that you have to have. It can start in aerobic conditions. We are

Vargas: not unique to sand

Hodges: accelerating nature

IN LANDSCAPING AND HORTICULTURE WHOEVER OWNS THE MOST MAKES THE MOST.





RIGHT?

WRONG.

Use, not ownership, creates profit.

You don't need to be an accountant to know that *owning* assets does not create profit . . . *using* them may.

In fact, your accountant might tell you that leasing may be the most cost-efficient financing source available today.

So if you're interested in a financing alternative that may provide you with tax advantages and that may improve your cash flow, consider these additional benefits of Agri-Lease® by Telmark®:

No down payment—Enjoy most of the advantages of ownership without tying up your working capital in large, initial down payments.

100% tax deductibility—In most cases, Agri-Lease payments are fully tax-deductible business operating expenses.

Bank/credit lines remain open—By using Agri-Lease to obtain what your business needs, you can keep your existing credit lines intact . . . and readily available.

If you want to know more about the financial benefits of Agri-Lease by Telmark . . . and how they may apply to *your* business . . . mail the coupon today.

I want to know more about the Flexible Financing Alternative℠

____ Equipment ____ Buildings

____ Vehicles ____ Machinery

Name_____

Address_____

City_____ State_____ Zip_____

County_____ Phone_____

Mail to:
Telmark Inc.
P.O. Box 4943
Syracuse, NY 13221

Note: Telmark leases are available throughout the Northeast, KY, MI, OH, VA and WV.
Minimum lease: $5,000

Agri-Lease® LM
BY TELMARK®

To find an
FYLKING FYLKING FYLKING
elite
FYLKING
bluegrass
FYLKING
at a
FYLKING
friendly
FYLKING FYLKING
price, you
FYLKING FYLKING
ought to
FYLKING FYLKING
read
FYLKING
between
FYLKING FYLKING
the lines.

Compare Fylking's competitive price and advantages! Fylking forms a thick, lush turf that has improved disease and drought resistance. Fylking greens up earlier, stays green longer; can be cut as low as ¾ inch—even ½ inch. Fylking has been proven over many years of international turf testing.

Ask your seed distributor for Fylking.

FYLKING
KENTUCKY BLUEGRASS
U.S. Plant Patent 2887

Another fine, quality controlled product of Jacklin Seed Company

simply accelerating a natural system. If we are going to continue our management practices, then we'll have to deal with it. We don't really know what kills the grass. The system we're working with shows iron is enemy No. 1, sulfate is enemy No. 2."

Roy Goss, Ph.D., Washington State University: "It all comes back to oxygen exchange within the soils. Even though you aerify, a 3½-inch depth may not be adequate. It could occur below that. We need to cure the condition first, then fertilize the turf."

Bob Shearman, Ph.D., University of Nebraska, using figures obtained in a GCSAA survey, says the conditon can occur in any region on any turf, but most often occurred on bentgrass or bentgrass/poa greens, usually in July or August. "Why is it showing up more now?" Shearman asks. "Water management is the critical issue. We need to be judicious in meeting the evapotranspiration demand of the grass. Nutrition plays an important role. The best results are with aerification and the use of wetting agents."

Application of a balanced fertilizer containing equal amounts of nitrogen and phosphorous helps.

Jim Tiedje, Ph.D., microbiologist, Michigan State University: "Black layer is very common in nature." He believes there are four conditions that must be present to have black layer: anaerobic conditions; a food supply; sulfur compounds; and sulfur-reducing compounds. Anaerobic conditions form from restricted oxygen supply and increased oxygen consumption, he says.

Joe Vargas, Ph.D., Michigan State, notes the condition is not unique to sand but occurs in soil as well. "We could all tolerate black layer if it didn't kill the turf," he says. Vargas believes it is caused by a relationship between algae and sulfur. "Sulfur takes oxygen out of the system, making it anaerobic." He says conditions are caused by excess irrigation, heavy rains and poor aeration down in the soil.

Stan Zontek, USGA Green Section, notes three types of black layer, two being: anything black, such as peat, but not a "bad black layer;" and a type which forms from physical differences in the soil such as layering. This type is easy to manage physically, he says. It can be combatted with core aeration and back-filling with sand or rebuilding the greens.

"The third type gives us the most concern," he says. It occurs just below the surface thatch layer, "even on USGA-specked greens. It's the result of something living in the soil. This type is associated with greens in pockets of slow air circulation." Sulfur is a cause, but not a direct one, he says. "Sulfur occurs naturally everywhere so backing off (applications) won't help that much." He explains that sand can have a hand in forming the layer if the high-draining media sits atop a much slower draining media like a clay soil.

Applications of a balanced fertilizer containing equal amounts of nitrogen and phosphorous also helps. Drainage improvements are necessary. "Build a new soil structure on top of the old but without causing layers." He emphasizes not changing top dressing media radically but getting a gradual transition in the particle size mix. He suggests raising cutting heights in the summer and aerating both shallow and deep. "Black layer is not AIDS," he concludes. "Not everyone is going to get it, and it can be gotten rid of."

So if you have it, it's not the end of the world. Solutions to the problem are agreed upon—even if the causes vary by source. **LM**

Circle No. 117 on Reader Inquiry Card

If you want to see how tough our new bluegrass is, you better step on it.

If you want Northrup King's new Aspen or Trenton Kentucky Bluegrass varieties in your next turf mix, you better get moving. Because now that they're finally available in Medalist® mixtures and blends, word is spreading fast.

And understandably so. Considering how well Aspen and Trenton performed in the USDA National Trials, every turf professional will be demanding Medalist mixtures and blends. Both varieties displayed superior disease resistance, winterhardiness, heat tolerance, excellent color and texture, and wide adaptability. All the signs of a sure seller.

So the next step is yours. Order Aspen and Trenton in Medalist Turf Products through your Northrup King Medalist distributor today. Or contact Northrup King, Medalist Turf Products Division, P.O. Box 959, Minneapolis, Minnesota 55440.

NK® NORTHRUP KING
Medalist Turf Products Division

Circle No. 131 on Reader Inquiry Card

DOWN BUT NOT OUT

If your business is in trouble, Chapter 11 of the Bankruptcy Code may be the answer.

by Rudd McGary and Ed Wandtke

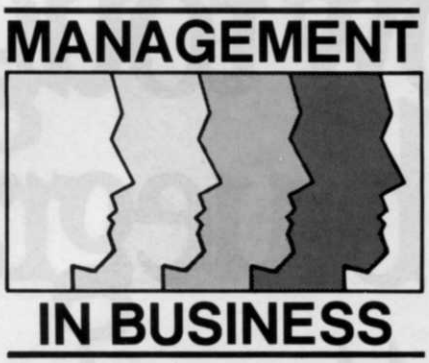
Because of our economy's rapid growth and the room for more business, many new companies have popped up in the green industry. This sudden influx of competitors has caused some successful companies to experience financial trouble for the first time.

Most businesses in financial trouble have alternatives: they can do nothing and hope for the best; they can attempt an out-of-court debt workout; or they can file a bankruptcy petition in court. Filing bankruptcy is necessary only if business owners can't see their business worsening and, therefore, take no corrective action.

Generally, businesses facing extreme financial difficulties should pursue one of the following:

- closing up the company and going out of business;
- selling the company;
- merging with another conpany; or
- restructuring the company inside or outside of a bankruptcy proceeding.

Wandtke and McGary are senior consultants with All-Green Management Associates in Columbus, Ohio. Dr. McGary focuses on marketing and managenent issues. Wandtke focuses on operations and financial questions.



Since a crisis atmosphere usually exists under such circumstances, it is important that the owner use key personnel inside the company. He or she must also supplement that team with outside personnel, such as industry consultants and financial help from experienced legal and accounting firms.

Using the bankruptcy law to assist you in turning around your company may be the best solution for your company, but it is expensive. What are your options prior to bankruptcy? When a business person realizes that the company is in financial trouble, the following pieces of information must be determined as accurately as possible:

- total amount and age of accounts payable;
- total amount and age of accounts receivable;
- current financial statements (month and year-to-date);
- total amount of revenue that will be received between now and the end of the business year;
- evaluation of the use of personnel;
- determination of the need for all of the assets currently owned or being financed;
- weekly cash flow needed to keep the company viable; and
- listing of potential customers and the amount of business that might be obtained.

Armed with the above information, company owners need to determine the chances for a turnaround of their company. If the prospects look bleak, you may seek help from the courts under the federal bankruptcy law in order to save your company.

Bankruptcy law options

The most common action under the bankruptcy law is to have a company go out of business. This is known as liquidation, which is done under Chapter 7 of the Bankruptcy Code.

However, another section of the Bankruptcy Code, Chapter 11, allows a business to restructure its finances so that it may continue to operate, pay its creditors, provide employment and eventually provide a return to its shareholders.

The most famous Chapter 11 of the 1980s is that of Chrysler Corporation, when using various forms of credit from both the private sector and the federal government rescued the company.

Chapter 11

This is a Bankruptcy Code action done in a Federal Court and is available to C or S corporations. It is an opportunity for a debtor to freeze debts while developing a plan to repay these debts over an extended period. This process protects the going-concern value of the company. Ultimately, the program is designed to repay debts and financially rehabilitate the debtor.

Here is how a Chapter 11 works:

Filing a petition with the bankruptcy court. This information will include debtor's list of creditors, schedule of assets and liabilities and a statement of the affairs of the debtor. This action may be done voluntarily or involuntarily. If it is involuntary, three creditors holding claims aggregating $5,000 or more must allege the inability of the debtor to pay debts as they mature. If this involuntary action proves to be wrong, the courts will dismiss the action and the court may grant the debtor costs, and attorneys' fees. If a trustee was appointed and took possession of the debtor's property, the debtor may be entitled to damages.

continued on page 44

UNLEASH THE BIG CATS.

The Jacobsen Turfcat family . . . the rugged breed that thrives on tough conditions.

Tall, thick grass. Undulating terrain. Even snow. You name it. Jacobsen Turfcats do more than survive tough operating conditions. They master them. Quickly and efficiently.

Pounce on one of seven gutsy Turfcats from 17-hp to 36-hp, in 3-wheel and 4-wheel models. Exclusive 2-speed, full-time, limited-slip transaxle delivers maximum power and traction in low range, to cut more and climb higher. Shifting to high range increases transport speeds, so you lose less time between jobs.

For superior stability, Turfcats have a low center of gravity and a hill-hugging, wide-track stance. Plus, quick, easy steering lets these agile cats dart around trees and in-and-out of tight spots.

The largest Turfcats give you an exclusive hydraulic implement drive system that eliminates belts, drive shaft and universal joints for reduced maintenance. And the harder you work this power delivery system, the better it works.

Tackle mowing tasks with your choice of durable 50″, 60″ or 72″ rotary decks. The rugged Deep-Tunnel rotary decks channel clippings out faster to increase cutting capacity without windrowing or clumping. In areas where thrown objects and noise are a concern, use the 50″ or 60″ fine-cut flail decks with downward discharge and a cut rivaling reels.

Turfcats won't hibernate once your mowing's done. Blades, brushes, snow blowers and a variety of other attachments keep these cats producing year-round.

So take a Turfcat for a run. Arrange a free demonstration with your Jacobsen distributor today. Attractive lease and finance plans available. Or for more information contact: Jacobsen Division of Textron Inc., Racine, WI 53403.

JACOBSEN
TEXTRON
Jacobsen Division of Textron Inc.

© Jacobsen Division of Textron Inc. 1988 J-6-8

Circle No. 118 on Reader Inquiry Card

CHAPTER 11 *from page 42*

The effect of this filing is to immediately create an "automatic stay" to restrain all interests from continuing or commencing any action against the debtor which could have been filed prior to instituting the "automatic stay."

Appointing a trustee. The courts may appoint a trustee or may allow the debtor to operate the business pending a further plan of workout to be prepared by the debtor. This second practice is known legally as a "debtor in possession."

Establishing a new company. After a Chapter 11 bankruptcy petition has been filed, in essence a new corporation is formed. A new set of accounting records and new bank accounts are started. This is necessary in order to separate transactions prior to the Chapter 11 filing from those after the filing.

Appointing a creditors' committee. As soon as possible after a Chapter 11 petition is filed, the Federal Court is required to appoint a Committee of Unsecured Creditors. This committee is usually composed of the seven largest unsecured creditors. The purpose of this committee is to protect the interests of the unsecured creditors and, if necessary, to petition the Federal Court to appoint a Trustee.

Additional options of the debtor. Just because a debtor has filed a petition under Chapter 11 of the bankruptcy code, he is not prevented from changing his mind and converting his petition to another chapter of the bankruptcy code. He is limited in his options if he is in an involuntary Chapter 11.

Filing the plan and disclosure statement. Any time after or at the time of filing the Chapter 11 petition, a debtor may file a plan of reorganization. The debtor does retain the right to file the plan for up to 120 days from the filing of the voluntary petition. If an involuntary petition is filed, the debtor has 120 days to file the plan from the entry of an Order for Relief.

An Order for Relief is entered in an involuntary case only if the debtor does not respond to the involuntary petition, creditors can prove that the debtor is not paying his debts or a receiver has been appointed by the courts. An additional 60 days is given the court to approve a plan. Thus it will take the court up to 180 days to confirm a plan for petitioners.

Contents of a reorganization plan. The seven elements of a plan of reorganization are known as mandatory provisions. They are:

- Plan must designate classes of claims and classes of interest. In addition it requires that it must provide equal treatment for similar interests.
- Plan must specify any class of claims that are not impaired under it. Impaired means that the rights of a creditor after the plan are lesser than before the plan was filed.
- Plan must specify the treatment any class of claims or interests that are impaired under the plan.
- Plan must provide the same treatment for each claim or interest in a particular class, unless the holder agrees to a less favorable treatment.
- Plan must provide adequate means for its execution. The plan must have sufficient income to pay the debts as proposed in it.
- Plan requires that a debtor or a related corporation may issue equity securities as consideration for the claims of certain creditors. It may not issue non-voting stock to the creditors.
- Plan can contain only provisions consistent with the interest of creditors, equity security holders and public policy. This is also known as the "catch-all" provision of the law.

Accepting the Plan of Reorganization. The law provides that every class of claims or interests is either impaired or unimpaired in a Plan of Reorganization. Depending on the status of a specific creditor (impaired or unimpaired), they have the right to accept or reject the Plan of Reorganization.

Chapter 11 allows a business to restructure its finances so that it may continue to operate, pay its creditors, provide employment and eventually provide a return to its shareholders.

Disclosure Statement—creditor advice. A Disclosure Statement is similar to a stock prospectus except that it does not go into the depth of information disclosure. Each class of creditor is provided the necessary information about the Plan of Reorganization which will enable them to vote on the plan.

Approval of the Disclosure Statement is obtained by an affirmative vote of two-thirds of each class of creditors who choose to vote.

Confirmation and hearing. After the disclosure statement is approved, the Clerk of the Court mails out notices to all creditors and equity security holders advising them of the plan, a ballot to vote and a disclosure statement. In order to have a Plan of Reorganization confirmed, 11 separate standards need to be met by the plan:

1. Comply with all applicable sections of the Chapter 11 Bankruptcy code.

2. Proponent must comply with the disclosure provisions of Chapter 11.

3. Plan must be proposed in good faith and cannot be used to defraud creditors.

4. Plan must disclose any promise to pay or payment to be made by the proponent.

5. The court will have the right to know and confirm all officers of the debtor company and any affiliated companies.

6. All regulated companies continue to be bound under those regulations for rate approval.

7. Court must determine that each class and each holder of a claim will receive the value of his claim upon liquidation of the plan.

8. Each class of claims or interests must accept or not be impaired under the plan.

9. Priority claims must be paid in full unless the claim holder consents to a different payment plan.

10. One class of claims must accept the plan without any acceptance by an insider.

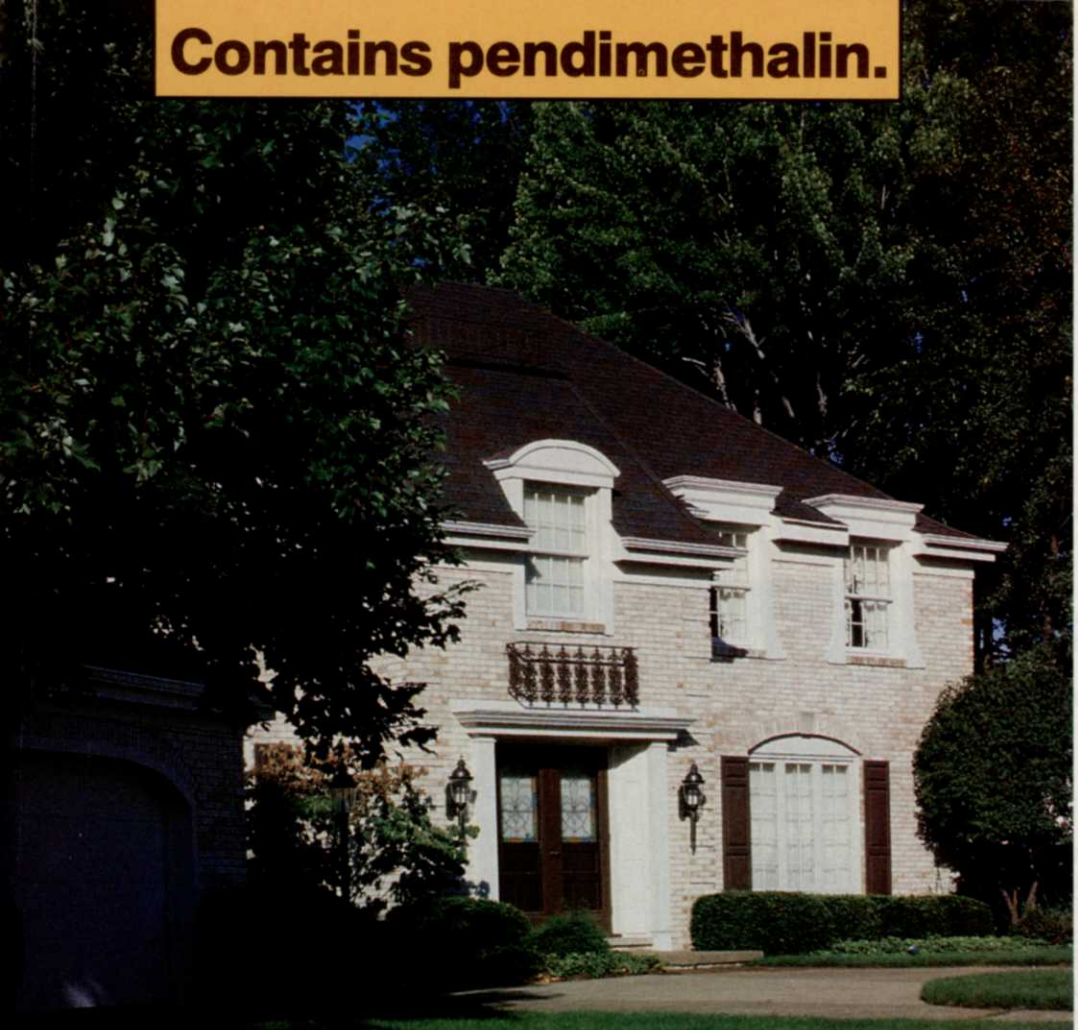
11. Confirmation of the plan will not be followed by a subsequent liquidation of the company under a different Bankruptcy Code action.

Post-Confirmation Matters. Once a Plan of Reorganization has been confirmed, all of the property of the estate vests in the debtor unless otherwise provided for in the plan. Any claim not filed in the court prior to the confirmation hearing is likewise discharged once the Plan of Reorganization is accepted. Any debt that cannot be discharged via a Chapter 7 Bankruptcy likewise cannot be discharged in a Chapter 11 action.

Summary

When a business starts to find itself in financial trouble, it is important to get the full picture before undertaking corrective action. Only by knowing the severity of the financial condition can an advisor provide the guidance needed to choose a course of action. Most businesses can be saved if corrective actions are undertaken. Only after all avenues of relief are exhausted should the company be placed in either Chapter 11 or 7. **LM**

Contains pendimethalin.



LESCO PRE-M® 60DG Herbicide

is the standard for pre-emergent weed control.

It's easy to understand why.

- active ingredient pendimethalin provides broader spectrum weed control
- registered for use on both northern and southern turfgrasses
- application flexibility permits programming to control both early and late germinating weeds
- increased profitability due to lower product cost
- convenient packaging requires less storage, simplifies shipping and handling

And LESCO understands the lawn service business. That's why we offer an innovative selling program with terms designed to improve first-round cash flow.

LESCO PRE-M 60DG Herbicide. The pre-emergent weed control standard. Order today.

(800) 321-5325 NATIONWIDE
(800) 686-7413 IN OHIO

LESCO

LESCO, Inc.
20005 Lake Road
Rocky River, Ohio 44116
(216) 333-9250

CYANAMID
Agricultural Division
VPC Ventures
Wayne, NJ 07470

Circle No. 124 on Reader Inquiry Card

SOIL FERTILITY AND FERTILIZERS

The backbone of any good turf care is a well-designed fertility program. All lawns need fertilizer applications to produce density and color. Here are some factors to consider.

by Bill Bedrossian, Servicemaster MLP

The turf condition that Americans try to develop is not a natural system. Natural turfgrass stands are mixtures of plants including weeds. These plants are both unattractive and may not cover the soil from year to year. The density of plant population is also unnatural. We are trying to develop a turfstand with many times the normal plant population. The ideal lawn is dense and uniform in both color and texture. It is only through good nutrition of the turf plant that we enable it to outcompete the constant encroachment of weeds.

The only reliable method of determining the fertilizer needs of a lawn is through a soil test to reveal the soil's native fertility. The test will pinpoint potential problems you could not be aware of.

The nutrient requirement for good turfgrass growth is usually much less than the soil's total nutrient content. However, much of the nutrient supply is stored in the soil's mineral and organic matter fraction. In order for a soil nutrient to be available to the plant root, it has to be in solution.

Proper soil aeration is also necessary for roots to take up the fertilizer nutrients.

Nutrient uptake

Since fertilizers are one of the main expenses in a lawn care program, it is important to understand the factors influencing uptake to maximize the response. The depth and extent of rooting affects how well the plant picks up nutrients. Well-developed root systems are in contact with more soil solution and have greater surface area to absorb nutrents.

PH is a second factor affecting nutrient uptake. As the pH values move

Bill Bedrossian received his bachelor's degree in plant sciences from Havorford College. He currently manages more than 31,000 acres of turf at ServicMaster MLP as director of grounds management.

out of the 6 to 7 range, plant nutrients become insoluble compounds. Since the roots only absorb nutrients in solution, those insoluble materials are not available to the roots. A good example is that phosphorous, in either an acid or alkaline soil, becomes an insoluble compound in the soil after being applied as a fertilizer.

Essential nutrients

An element is essential if a deficiency of the element makes it impossible for the plant to complete its life cycle. The deficiency can only be corrected by that element The following table lists the essentlal elements, their symbols and the source.

Nitrogen

Nitrogen is used in turfgrass fertilization in greater amounts than any other element. It has a greater impact on the turfgrass plant than any other element and is a constituent in every living cell and part of the chlorophyll molecule that determines the green color of the leaf. Nitrogen results in a darker green color and improves the overall quality of the plant unless applied in excessive amounts.

Nitrogen applications accelerate growth of shoots, rhizomes and roots. However, excessive rates inhibit root and rhizome growth. Excessive shoot growth at very high rates will deplete carbohydrate reserves for the rest of the plant. This leads to the death of the root system.

The nitrogen level directly relates to color and shoot density. As levels decrease, color lightens, and shoot density decreases.

Nitrogen nutrition also influences disease severity. High nitrogen levels increase the severity of brown patch, Fusarium blight, leaf spot and Ophiobolus patch. At low levels of nitrogen nutrition, dollar spot, red thread, powdery mildew and rust increase in severity.

Resistance of cold, heat, and drought stress can be modified by the nitrogen nutrition level. Very low or excessive rates will have a negatlve effect. High levels of nitrogen enhance wilting by decreasing root mass and increasing the leaf tissue's succulence.

Late fall fertilization with nitrogen has a dramatic effect on root growth. No other period in the year produces the same root response.

Even though the turf plant is surrounded by tons of atmospheric nitrogen (air is 78% N_2), this form cannot be used by plants. The most common form used by plants which the roots can absorb is the nitrate ion (NO_3^-).

Urea is the most common form of nitrogen used to fertilize turfgrass. If heavy rainfall occurs, it may be washed through the soil or leached. If soil aeration is poor, the anaerobic (no oxygen) bacteria will convert the nitrates to gaseous nitrogen. In both of these processes, leaching and denitrification, nitrogen is lost from the soil.

The last possible fate is immobilization back into the soil organic matter. Some groups of bacteria need nitrates as part of their nutrition. As bacteria die with nitrates in their bodies, we say the nitrates are immobilized but not lost from the soil.

Phosphorus

Phosphorous is an essential element found in every living cell. It is necessary for energy transfer in each cell. It is extremely important to establish new seedlings. Since it is very immobile in the soil, it accumulates near the surface.

Outside the 6.5 to 7.5 pH range, phosphorous ions become insoluble and unavailable to the plant.

Potassium is unique compared to the other major elements. It does not

continued on page 48

Granular fertilizers remain the most popular type of nitrogen source in the landscape market. Liquid fertilizers, which are sprayed on the grass, are second.

Table 1

ESSENTIAL MINERAL ELEMENTS FOR TURFGRASS

Quantity Usage	Element	Chemical Symbol	Source
Macro	Nitrogen	N	Soil
	Phosphorus	P	
	Potassium	K	
	Sulfur	S	
	Calcium	Ca	
	Magnesium	Mg	
Minor	Iron	Fe	
	Manganese	Mn	
	Boron	B	
	Copper	Cu	
	Zinc	Zn	
	Molybdenum	Mo	
	Chlorine	Cl	
Macro	Carbon	C	Carbon Dioxide
	Hydrogen	H	Water
	Oxygen	O	Water
Macro Acronym	C HOPKINS	CaFe Mg	

become a part of the cell. However, large quantities are needed to ensure the development of the plant.

Turfgrasses do not show the dramatic visual response to potassium that they do to nitrogen. Unless there is a great deficiency in the soil, you will not see color, density, or growth changes with potassium applications. However, potassium will have a positive effect on root growth, wear tolerance, ability to withstand environmental stress and disease resistance.

Fertilizers

All fertilizers, whether liquid or granular, require labeling mandated by state agencies. It is a legal requirement to state on fertilizer labels:

- The percent of each element; always in the same order, N/P/K (nitrogen/phosphorous/potassium (ie: 18-5-9 means that the bag contains 18% nitrogen, 5% phosphorous and 9% potassium).
- Under the nitrogen is a list of nitrogen carriers and their portion of the total nitrogen.
- The primary nutrient list describes the basic fertilizer materials used to make the fertilizer.
- The net weight stated at the bottom tells you the total weight of the fertilizer. This weight, multiplied by the percentage of each element, equals the weight of each element in the bag (i.e., .18 × 50 lb. = 9 lb. of N in the bag).
- Potential acidity statement tells you that the fertilizer, when applied to the soil, has an acid-forming reaction. In some areas, calcium carbonate (lime) is applied to neutralize the acid effect caused by fertilizer on the soil surface.

With proper balance of water soluble and water insoluble nitrogen, you can achieve a quick green-up from the WSN and then a sustained color and growth from the WIN.

Complete fertilizers

Fertilizers containing all three elements, N-P-K, are called complete fertilizers. Incomplete fertilizers have one or more of the elements missing, such as 20-0-5. Straight goods fertilizers are one material like urea, 46-0-0. The question often asked is, "Why don't the percent numbers add up to 100?" These fertilizer materials are compounds instead of pure elements. For example, urea is a compound made of nitrogen, carbon and oxygen. The pure element is either unstable or maybe a form which is useless to the plant.

If excessive amounts or improper fertilizers are applied to the turf, you burn the grass. When fertilizer dissolves, it forms a salty solution which, if saltier than the solution inside the plants, will actually draw the water out of the plant. This dried, brown condition is actually a desiccation of water. If severe, the grass dies. However, burns normally are temporary and recover.

The higher the salt index, the greater the potential to damage the turf. The selection of materials is based partially on these salt indexes to give you a high degree of safety.

Carriers

Nitrogen sources can be broken down into water soluble and water insoluble materials. The water soluble materials (WSN) are generally inexpensive, fast-acting and have a high burn potential. Water insoluble nitrogen (WIN) is more expensive, longer-lasting and has a low burn potential.

With proper balance of WSN and WIN, you can achieve a quick green-up from the WSN, then a sustained color and growth from the WIN.

These combinations give you a high degree of safety from turf burns at a good price. Urea is the most common nitrogen carrier used as a water soluble source on turfgrasses.

Urea—Urea is used as a quick-releasing water soluble nitrogen source in many fertilizer applications. Although not in an available form as applied, it is quickly converted to NO_3^- in warm soils.

Urea formaldehyde—This is a nitrogen compound made by combining urea and formaldehyde to form various length compounds. The longer chain compounds take much longer to break down to NO_3^-. These materials are insoluble in water and require soil bacteria to break them down to NO_3^-. They will not break down in cold weather because the bacteria are not active then. Urea formaldehyde

MUSTANG

THE TALL FESCUE THAT LOOKS LIKE BLUEGRASS

KENTUCKY BLUEGRASS

MUSTANG TURF-TYPE TALL FESCUE

BLUEGRASS QUALITIES WITH TALL FESCUE PRACTICALITY

You'll quickly notice Mustang's finer texture, rich dark green color and dense, uniform turf—and you'll understand why we say Mustang has bluegrass-like qualities.

But there's more to Mustang turf-type tall fescue than beauty; it's tough and durable. It's heat and drought tolerance, winter hardiness, and ability to endure low mowing heights are remarkable. Mustang even shows improved resistance to *Helminthosporium* netblotch and many other diseases.

Best of all, Mustang is practical, because it performs extremely well under low maintenance conditions like minimum fertilization, watering and mowing. National tests and actual applications in parks, golf courses and playing fields have proven it.

DROUGHT TOLERANCE AFTER SEVEN WEEKS NO RAINFALL.

KENTUCKY BLUEGRASS | **K-31 TALL FESCUE**

That's why Mustang is becoming the favorite choice of professional turf managers, over K-31 and many other commercially available varieties.

For bluegrass qualities and tall fescue practicality, use the professional's choice—Mustang turf-type tall fescue.

Pickseed also produces

Fiesta PERENNIAL RYEGRASS and Banff Kentucky Bluegrass

and other fine turf grasses available nationwide from quality seed suppliers.

Produced by:

PICKSEED®

PICKSEED WEST Inc.

P.O. Box 888 • Tangent, Oregon 97389

(503) 926-8886

Circle No. 137 on Reader Inquiry Card

Frankly my dear... I'll take grass

Both artificial turf and natural grass have advantages for the baseball player, but 90% of today's players don't prefer one to the other, says Hall of Fame outfielder **Billy Williams**. Grass, however, is more likely to sustain a career.

'We always say that artificial turf takes two or three years off a player's career," said Williams at the third annual Midwest Sports Turf Institute in Glen Ellyn, Ill. The first to go are a player's knees, says Williams, victims of continuous pounding on a hard surface.

He also reminded groundskeepers that "A good ground crew can mean the difference between a home team winning an extra five or six ballgames a year."

Match your turf with your sport

When planning to put grass down on your football, soccer, or baseball field, the most important characteristics to look at are a cultivar's growth and recovery rate, traffic and compaction tolerance, disease resistance and cultural intensity level, says Tom Voigt, assistant horticulturist at the University of Illinois, Urbana. Here's how Voigt sees each through the eyes of a groundskeeper in the Midwest:

Kentucky bluegrass has a good recovery rate, medium traffic tolerance (which can be improved by combining it with perennial ryegrass), medium to high compaction tolerance, medium disease resistance and a medium cultural intensity level.

Perennial ryegrass has a slow recovery rate but good traffic and compaction tolerance. "The newer varieties can be mowed lower and have improved disease resistance and cold/heat tolerance compared to the older varieties," says Voigt.

Tall fescue, despite a poor recovery rate, has good traffic and compaction tolerance, high disease resistance and medium cultural intensity and germination rate. A mix of 90% tall fescue and 10% Kentucky bluegrass may lead to one variety dominating the other. Voigt suggests mixing Tall fescues with a less aggressive bluegrass such as Bronco.

Creeping red fescues have a low traffic/compaction tolerance and disease resistance level. "I don't think fine fescues are going to play a big role in sports turf in the Midwest," concluded Voigt.

Creeping bentgrass, the "Rolls Royce" of the bentgrasses, recovers well but has poor traffic and compaction tolerance and low disease resistance. "This is a grass that you have to constantly work with to be successful."

breaks down over a period of three years on a schedule of 60% the first year, 30% the second year and 10% the third year. Urea formaldehyde can be finely ground to a powder to be sprayed as a suspension.

IBDU—Isobutylidine diurea is a slightly soluble nitrogen compound available in a coarse and fine granular form. It is a slightly soluble material releaslng a little nitrogen each time it is exposed to water. As long as water is not freezing, it releases nitrogen independent of temperature. All of its nitrogen will be released the year of application.

SCU—Sulfur-coated urea (SCU) is not a truly water insoluble nitrogen source, but it is considered a controlled-release material. Water soluble urea is sprayed with molten sulfur and then sealed with wax. Since these coatings vary in thickness and imperfections, the coatings gradually break down over a 12- to 14-week period. This materlal is only applied as a granular fertilizer.

Turfgrasses do not show the dramatic visual response to potassium that they do to nitrogen.

Potassium carriers—Muriate of potash (KCI) and sulfate of potash (K_2SO_4) are the two most commonly-used sources of potassium (K). Muriate is much cheaper, but it has almost double the salt index of K_2SO_4. In sprayed materials where salt index is critical, the sulfate form is preferred. Often, high soil pH makes K_2SO_4 the preferred potassium source in a quality fertilizer.

Application

Application equipment is designed to apply granular fertilizers, liquids and suspensions. Insoluble fertilizers can be ground to a powder and sprayed as a suspension.

Sprayed fertilizer does not have to be strictly fast-acting. Since insoluble, slow-acting fertilizers can be suspended in solution, then can be applied by spraying.

Water soluble urea can be applied as a granular material or sprayed. The difference in quality between liquid or granular fertilizers is not how they are applied but what's in them.

Becoming familiar with the variety of ingredients available in a fertilizer will help you buy wisely and make the most effective use of your fertilizer dollar. **LM**

Ryan brings quality aeration from golf greens to green lawns.

Introducing the new Ryan Lawnaire® 28.

The revolutionary Lawnaire 28 combines the technology and precision of golf course aeration with the demands of lawn maintenance. Its reciprocating, crank mounted tine arms feature a vertical coring action similar to larger Ryan aerators. Tines penetrate straight in to a depth of 2½ inches, and come straight out. The results are a more professional-looking job, better root development, greener lawns, and more satisfied customers.

Make more money by the yard.

Because time is money, the Lawnaire 28 is designed to cover big jobs quickly — up to 24,000 sq. ft. per hour. But because not every job is big, it's also compact and maneuverable. Just 34 inches wide, the Lawnaire 28 easily fits through yard gates. The unique tricycle front wheel gives the unit a zero turning radius while aerating!

Even the tightest spots are no problem. And because it's a Ryan, you can rest assured that the Lawnaire 28 will keep you on the job and out of the repair shop for years to come.

Check out Ryan's reliability in your own backyard. Contact your Ryan dealer and ask for a free demonstration today. Or call toll free: **1-800-228-4444.**

RYAN®

BUILT TO LAST

A CUSHMAN Product Group

6189 Ryan, P.O. Box 82409, Lincoln, NE 68501

© Outboard Marine Corporation, 1988. All rights reserved.

Circle No. 105 on Reader Inquiry Card

On Design

1988 NATIONAL LANDSCAPE ASSOCIATION WINNERS

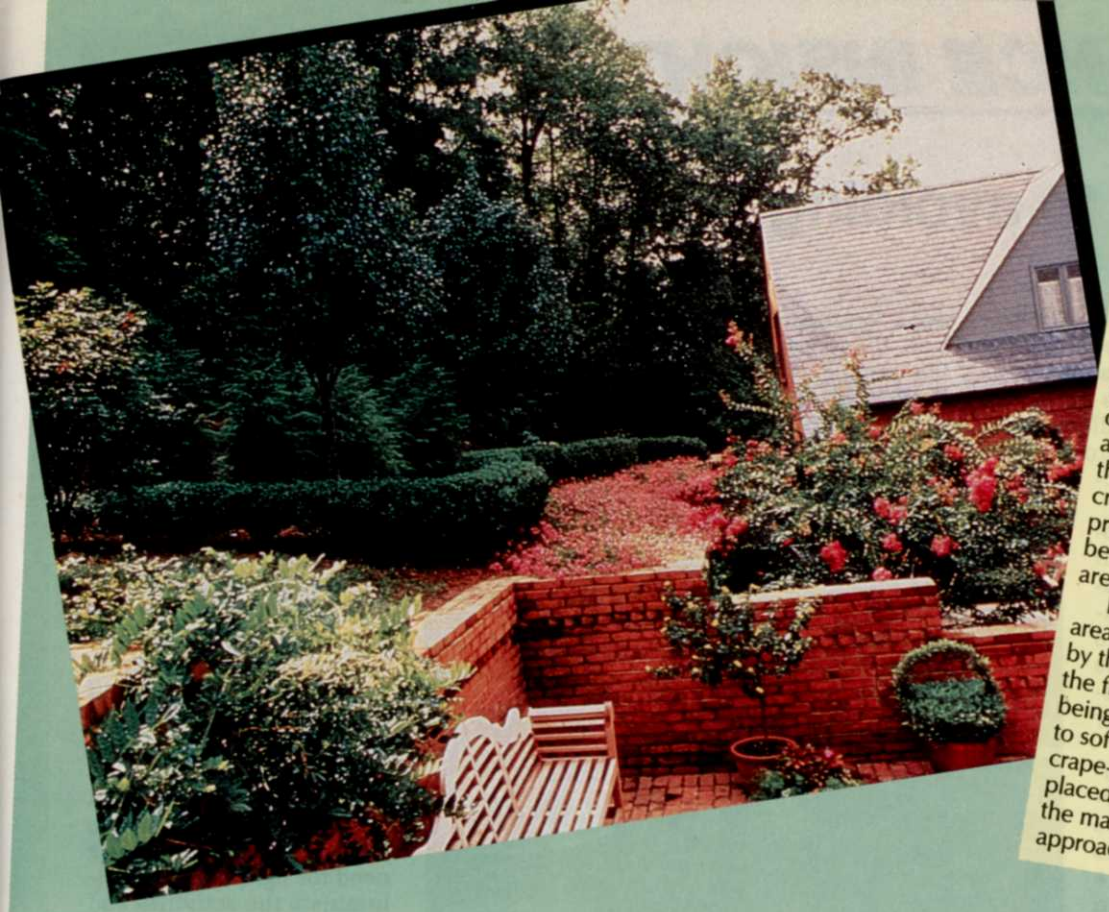
by Will Perry, managing editor

If necessity is truly the mother of invention, then the Gibbs Landscape Company of Smyrna, Ga., would make Thomas Edison proud. The company was called in to landscape this Atlanta residence after its owners discovered it had been sited too close to a steep bank. Gibbs' job was to install a swimming pool and cabana and to provide a pleasing view from both the residence and pool.

The pool was set at an intermediate level between the residence and the upper garden. The steps leading to it border flowering crapemyrtle, which provide brilliant summer color and lend to a sense of enclosure. The design of the pool included building several planting islands to break up the brick decking and to add green along the pool's edge. The area features numerous plantings to provide year-round color while treeforms soften the vertical scale of the residence.

When the owners of this residence called Friends Landscaping, Inc. of Fort Lauderdale, Fla., they said they wanted to renovate the property using the traditional landscaping forms that made the place the showplace of the day in the 1920s. The company's design integrated elements of restoration with the functionality of modern elements to earn a Superior Award from the NLA.

Here, a brick walkway leads to the main entrance of the residence with an exterior courtyard wall to the left. The entrance is flanked with shrubs and tropical plants and the courtyard, located off the formal living area and entry, holds a Mediterranean-style pool and an 8-foot tiered bowl fountain made of Florida Keystone. The addition of a large cluster of Phoenix palm, Alexander palms and a yellow tabebuia add special definition to this area.



When renovating the Cooper residence of Marietta, Ga., Creative Scapes, Inc., sought to create the feel of a southern garden with an English motif. Five distinct areas were carved into the slope on which the home is sited. Brick walls, which were designed to retain the soil and direct the guest into the environment, had created a drainage problem by trapping water between it and the patio areas.

In this main entrance area the visitor is greeted by this lutchyens bench on the first landing. Wisteria is being trained along a wire to soften the wall and crape-myrtles have been placed to give a glimpse of the main courtyard as you approach the house.

This 60-year-old bungalow on the Peconic Bay in New York was partially destroyed in a winter storm, leaving only three walls intact. The firm of Ireland-Gannon Associates did its part in renovating the house by helping its owner create functional, outdoor spaces with large entertaining areas, seasonal color, privacy from the beach right-of-way and neighbors, as well as unrestricted views and access to the bay.

Here the firm placed planters of portulaca, ivy geranium, carex, dracena and pink geranium to create an intimate space within a large entertaining area. Also, since the residence is used during summer weekends, these plants need little maintenance and can be stored safely away in winter.

Two keys to avoiding recreation lawsuits

by Jim Leatzow

Futurists continue to predict the tremendous growth for recreational activities in the United States. Unfortunately, this rise parallels the record number of lawsuits being filed against both the designers and providers of recreational areas, activities and equipment.

The designers and providers of this equipment are subject to an ever-increasing barrage of litigation. As a result, people who design these areas need to figure potential liability exposures in their plans.

As equipment designers or installers, you inevitably create exposures within the equipment, its overall design, and the proximity to other risks in the area. Exposure to lawsuits begin even with your drawings. The actual litigation, though, is likely to come after the facility has been in place for some time. Someone can get injured (real, or exaggerated with the urging of legal counsel) and file an action against you, your firm and every other perceived "deep pocket" involved with the equipment.

Because of this, you are being held to an ever higher standard of competence since your designs may come under close scrutiny—especially in court. It is no longer sufficient to merely produce a nice design that looks great. You must be your own best and worst critic: examine how your design could possibly cause or just contribute to someone getting hurt.

First, check those areas where people will most likely congregate. In these areas, avoid using potentially dangerous plants, such as those with sharp thorns or needles. Also, plants shouldn't interefere with a person's ability to steer clear of a dangerous situation.

Consider, too, situating the playing areas in such a manner as to maximize safety. Don't place a tot-lot immediately adjacent to a busy street without a significant fence or similar barrier. Likewise, you shouldn't place the outfield of a ball diamond near a busy street since you could reasonably predict that an eager outfielder would chase a ball without looking for traffic first. Noting the sun's position when locating sport fields is also a good idea.

When designing or installing recreational equipment, it's best to plan for the worst.

You must be very critical of the equipment to be chosen or specified. It is not unreasonable to ask the manufacturer for the product's safety record. Similarly, it is prudent to determine whether the manufacturer maintains product liability for its equipment. If a supplier doesn't carry product liability, it probably has had a problem with claims and can't find or afford much coverage. Though coverage today doesn't guarantee the manufacturer will be covered two years from now, it at least shows that you went beyond merely choosing the equipment out of a book.

You will be responsible for the design of anyone you hire as a consultant.

Once you have specified the equipment, it is equally important to select soft, cushioning material to surround it. On natural grass sport fields you need to consider some form of sprinkler system to keep the playing surface soft, healthy and resilient. There has been a dramatic increase in litigation stemming from sports injuries directly related to hard packed dirt where grass has been allowed to die. By making a written recommendation to your client, you have covered yourself professionally should an injury result from turf neglect.

If the specific area you are designing includes use after dark, be aware of the need for lighting to both illuminate the activities and provide security. Again, informing your client of your security concerns in writing goes a long way toward protecting yourself. If you hire a professional to handle the lighting design, make certain they carry professional liability too, since you will be responsible for the design of anyone you hire as a consultant.

It is important to make sure the actual construction of your equipment is according to your plans and specifications. If a "creative" landscape contractor doing the installation altered your plan, the onus is on you to notify the client (again in writing) that a problem exists. You should also consider giving your client some information regarding the maintenance of your plan to preclude dangerous situations.

This might include such areas as directions for maintaining plant growth habit, annual replenishment of cushioning material and periodic safety inspections for the installed equipment to make certain hardware isn't missing and that the equipment is being used for what it was intended.

Follow these recommendations and make sure your file documentation is complete. With that done, you will be adequately prepared for the legal attack that ultimately can and will occur. **LM**

Jim Leatzow is president of Leatzow & Associates, Glen Ellyn, Ill. He specializes in green industry matters.

How to turn summer stress into spring success.

You see it every year, without fail. Summer stress takes its toll on turf, resulting in lawns that lack density, color and resistance to damage.

But you can turn summer stress into spring success with an effective fall fertilization program that includes Lebanon Professional Turf Products.

Lebanon's fall fertilization products like Lebanon Pro 32-4-8 and Lebanon Pro 28-6-12 are specially formulated to give better fall color, enhance root growth, increase winter hardiness and provide quick green-up next spring.

Lebanon's quality SCU blends help keep your customers' lawns at the peak of perfection all year round. Plus they are priced to help you maintain a competitive edge and keep your business growing.

For more information on Lebanon Professional Turf Products for fall fertilization, call our Greenline today at 1-800-233-0628 or 1-717-273-1685.

Lebanon
TOTAL TURF CARE

A division of Lebanon Chemical Corporation
P.O. Box 180 • Lebanon, PA 17042

Circle No. 123 on Reader Inquiry Card

'Right connections' for mobile business

Warner's Nursery & Landscape is a company geared for mobility. Headquartered in tiny (population 7,000) Page, Ariz., Warner's sells more than $1.1 million worth of landscape work and materials a year. The company supports seasonal employment of up to 60 by working across long distances of arid northern Arizona.

Last summer, the closest job was 100 miles away and the farthest was 150, according to Dennis R. Warner, general manager of the family-owned concern. So Warner's is a company on wheels and wings. It has two vans which serve as mobile warehouses, about 16 other vehicles and one airplane.

"When you're working more than 100 miles from the nearest town, as we so often are, you don't want to forget *anything*," emphasizes Warner. "So we pack our vans very carefully."

All-in-one products like the new 3M DBY Direct Bury Splice Kits are popular with the mobile firm. "They simplify packing," Warner points out. "The self-contained kit with two Scotchlok connectors and two gel-filled insulator tubes eliminates the problems that came with older products: tubes with sealant that dried out and crimping bands which got lost. The kit solves the problem of leaving a needed piece back home."

Warner's nursery and landscaping businesses include:

- landscaping and irrigation contracting, primarily commercial, using hydroseeding;
- a retail nursery and garden center which serves the Page area and supports the landscaping operation; and
- contract landscape maintenance.

Northern Arizona averages less than seven inches of rainfall a year. Thus, virtually every Warner's landscape project involves irrigation—and conservation, too, because every drop of water in Lake Powell is allocated to users as far away as Los Angeles. So when Warner's contracts for a job, the company hires engineers and architects to develop advanced water-handling techniques.

Warner's has used DBY connectors on all its irrigation projects since January, 1987.

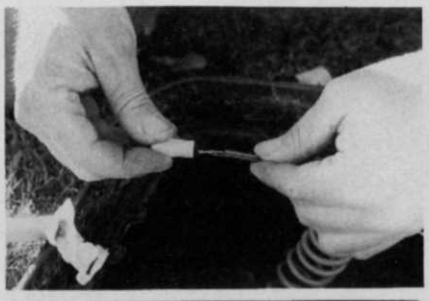
"From the first, the crews have liked them. And the DBY's slight extra cost is far more than offset by the labor savings at $12 an hour," explains Warner. "They're not as messy as the old connectors were with sealant, so they make the task neater, easier and cleaner. And they reduce the nonproductive time formerly spent looking for lost bands."

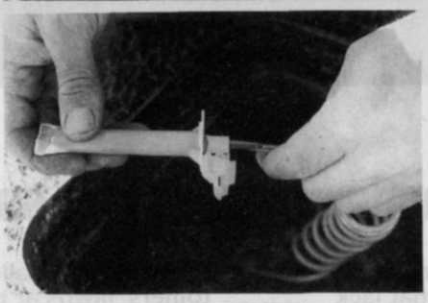
To splice with a DBY, the worker strips the wire ends, twists on the Scotchlok Y Electrical Spring Connector, inserts it in the gel-filled tube and snaps the cap shut. That's it.

Warner has installed nearly 1,000 DBYs without a failure, and also sells them to nursery do-it-yourselfers putting in their own irrigation systems.

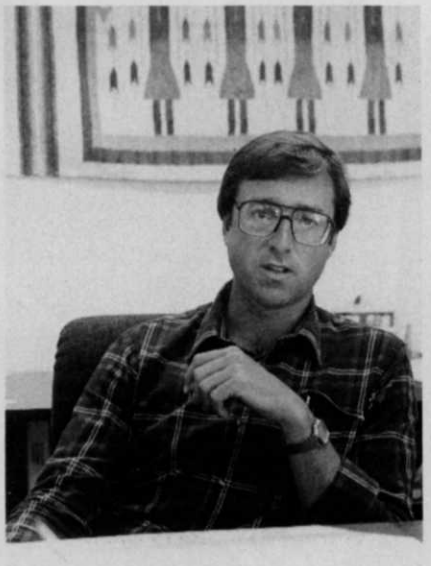
They are also the standard connectors stocked in Warner's traveling "warehouse" vans. **LM**

Connecting the second of 3M DBY Direct Bury Splices is equipment operator Christopher M. Cabral. The self-contained DBY kit, with nothing to lose and no sealant tubes to dry out, is invaluable to Warner's because its jobs are often in remote areas.



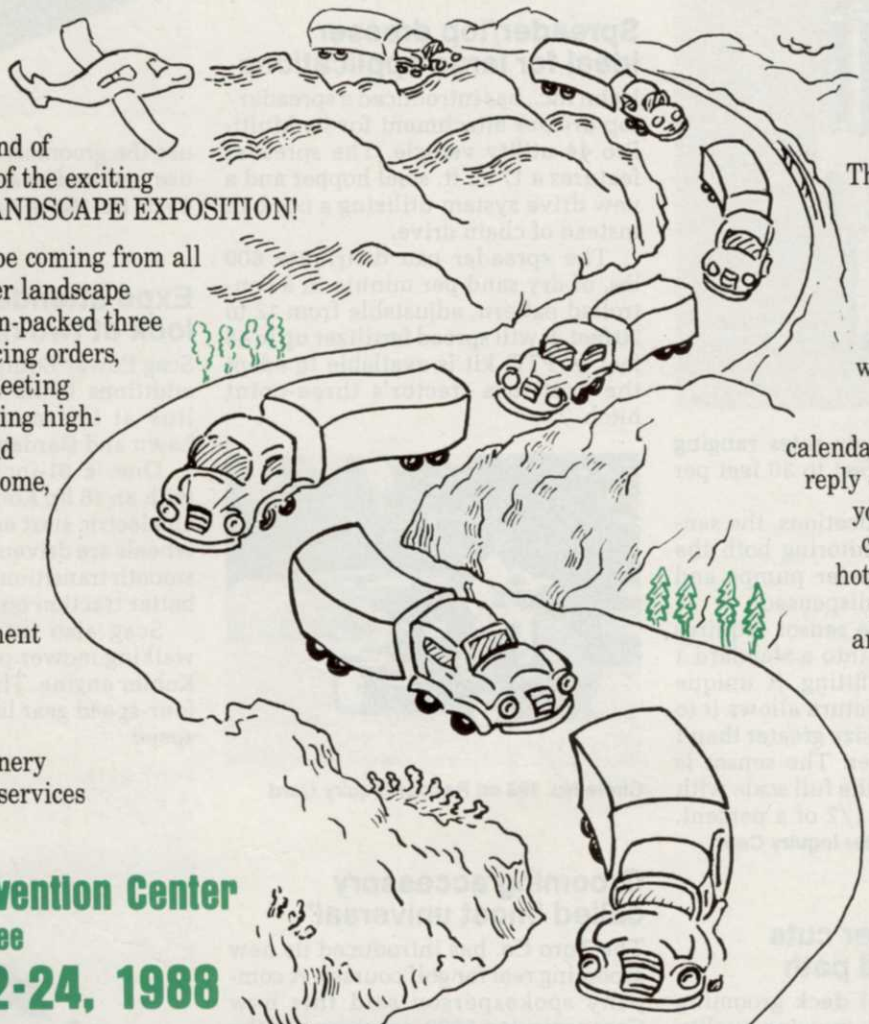


As a first step (left), Cabral strips the wires, then twists on a Scotchlok Y Electrical Spring Connector. He then (center) inserts the connector into the 0.6-inch by 4-inch gel-filled polypropylene insulator tube, pushing the connector all the way to the bottom where locking fingers will grip it. Next, Cabral positions the wires in the wire channels, closes the insulator tube cap until it snaps securely, and the job is done.



"We are geared for mobility because we work across all of northern Arizona," explains Dennis R. Warner, general manager of the nursery and landscape operations. "We have two vans which serve as mobile warehouses, plus about 16 other vehicles."

TRUCK ON DOWN



To Nashville, heartland of the country and site of the exciting THIRD ANNUAL LANDSCAPE EXPOSITION!

Your colleagues will be coming from all directions to join other landscape professionals for a jam-packed three days of shopping, placing orders, testing equipment, meeting new suppliers, attending high-powered seminars, and sharing some down-home, foot-stompin' fun.

Among the exhibits will be:

- Power equipment
- Seeds
- Chemicals
- Accessories
- Heavy machinery
- Systems and services

There's more. Three days of seminars, presented by key players in the industry, will cover the vital technical and business issues which keep you on top.

Mark your calendar now, and return the reply card today. We'll send you complete exhibitor, conference, travel, and hotel information. Truck on down to Nashville, and take the break you deserve – you're entitled to it.

The Third Annual Landscape Exposition

Nashville Convention Center
Nashville, Tennessee
October 22-24, 1988

EDGELL EXPOSITIONS

Sponsored by Landscape Management and Lawn Care Industry Magazines

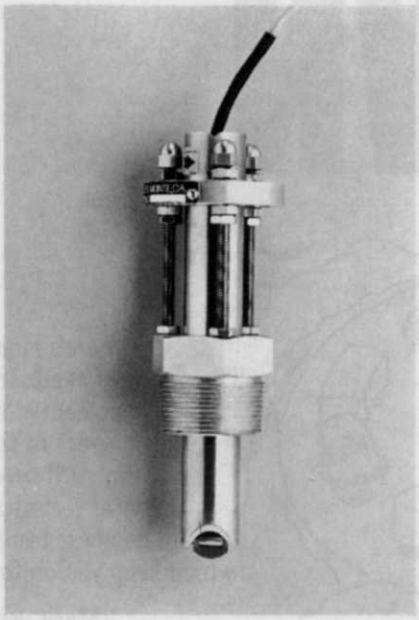
Produced and Managed by Edgell Expositions
A Division of Edgell Communications, Inc.

Circle No. 122 on Reader Inquiry Card

PRODUCTS

New flow sensor monitors booster pump performance

Signet Industrial has introduced its MK 3-2157 Perma-Flo insertion flow sensor, an economical instrument



that can monitor flow rates ranging from as low as 0.7 feet to 30 feet per second.

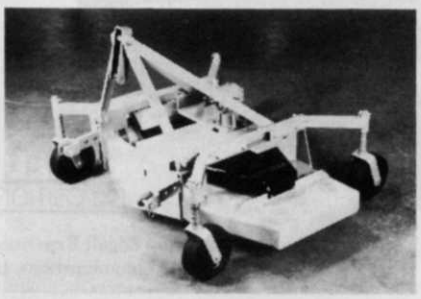
In irrigation applications, the sensor is ideal for monitoring both the performance of booster pumps and the amount of flow dispensed.

Installation of the sensor requires that it be threaded into a standard 1 1/2-inch threadlot fitting. A unique quick adjustment feature allows it to be used in any pipe size greater than 1 1/2 inch in diameter. The sensor is accurate to ±1% of the full scale with a repeatability to ±1/2 of a percent.

Circle No. 190 on Reader Inquiry Card

Flat deck mower cuts a well-groomed path

The Land Pride flat deck grooming mower offers superb mowing quality and durability. The mower features high-speed cutting knives and a contour-hugging design.



Floating hitch blocks and a swivelling top link prevent scalping while the combined options of front rollers and two or four gauge wheels keep the deck close to the ground. The tubular chassis absorbs shock loads instead of the deck.

The unit hooks up easily with a clevis hitch and in-and-out hitch blocks allow the mower to be held closer to the tractor.

Circle No. 191 on Reader Inquiry Card

Spreader/top dresser ideal for large applications

Hahn Inc., has introduced a spreader/top dresser attachment for its Multi-Pro 44 utility vehicle. The spreader features a 17 cu.ft. steel hopper and a new drive system utilizing a cog belt instead of chain drive.

The spreader can distribute 600 lbs. of dry sand per minute in a controlled pattern, adjustable from 12 to 20 feet. It will spread fertilizer up to 45 feet. A PTO kit is available to adapt the unit to a tractor's three-point hitch.

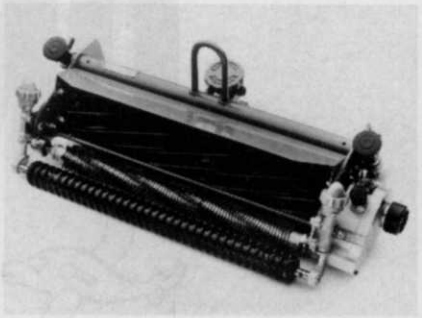
Circle No. 192 on Reader Inquiry Card

Grooming accessory called 'most universal'

The Toro Co. has introduced its new grooming reel for golf courses. A company spokesperson said this new Greensmaster 3000 accessory is the most universal tool available to superintendents and allows more consistency in greens maintenance, truer ball roll and healthier turf.

"Our customers gave us the message that a grooming reel more adaptable to individual needs still was needed within the industry," said Helmut Ullrich, marketing manager for Toro's Commercial Division. "Because our product features the ability to be fine-tuned for every changing condition during the growing season, it is essentially a new management tool."

Toro's exclusive "quick up and quick down" feature allows the reel to be raised or lowered easily without losing the depth setting. The operator quickly can choose when and how to



use the groomer, avoid groomer overuse and undue stress on the grass.

Circle No. 193 on Reader Inquiry Card

Expo attendees get first look at two new mowers

Scag Power Equipment unveiled two additions to its commercial mower line at last month's International Lawn and Garden Expo in Louisville.

One, a 61-inch hydrostatic rider with an 18 hp Kohler engine, features an electric start engine. Both its drive wheels are driven independently for a smooth transition through curves and better traction on hillsides.

Scag also introduced a 72-inch walking mower powered by an 18 hp Kohler engine. This mower features a four-speed gear box for faster ground speed.

Circle No. 194 on Reader Inquiry Card

Man-made rock forms replicate natural settings

The Rock Fabricating Division of Masonry Seal Corp., replicates natural

Fine Fescue for Sure

Maintaining a fairway can be a real headache. Fine fescues give you less to worry about...

Keeping your course looking great and your budget balanced can be a real headache. Oregon grown fine fescues can make your job just a bit easier. When used on tees and fairways, fine fescues offer shade tolerance with low fertilizer and water requirements. Fine fescues mix well with ryegrass and bluegrass without getting pushy, and they have a tight, upright growth habit. Oregon fine fescues germinate and perform better than imported varieties.

Where do you *find* fine fescues? On tees, fairways, roughs, parks, home lawns, industrial campuses and anywhere a fine textured, shade tolerant turf is desired.

Where do you *get* fine fescue? Ask your distributor for *Oregon grown* fine fescue *for sure!*

For a series of eight tech sheets on Oregon grown Chewings and creeping red fescues, call or write

OREGON FINE FESCUE COMMISSION
2140 Turner Road SE
Salem, OR 97302
503/585-1157

Circle No. 135 on Reader Inquiry Card

environments in pneumatically applied man-made rock formations from project design to completion. The company also refurbishes existing rockscapes.

The company offers a program which can include consultation, design, scale models, fabrication and coordination for a complete project. M.S.C. works in conjunction with R.J. Stovicek and Assoc., designers, artists and architects, and Master Builders, which provides engineering and technical knowledge.

Circle No. 195 on Reader Inquiry Card

Lightweight nine-gang reduces soil compaction

The GR-9 Jerry Clipper nine-gang mower cuts a 20-foot swath but retracts to a transport width of eight feet, three inches. The high-stress steel tube frame is lightweight but strong, reducing compaction while absorbing punishment, its manufacturer says.

Jerry Clipper's PTO allows the operator to select reel speed for each mowing job. The mower's four wheels pivot on 360 degrees so that the mower can turn tightly and even back up.

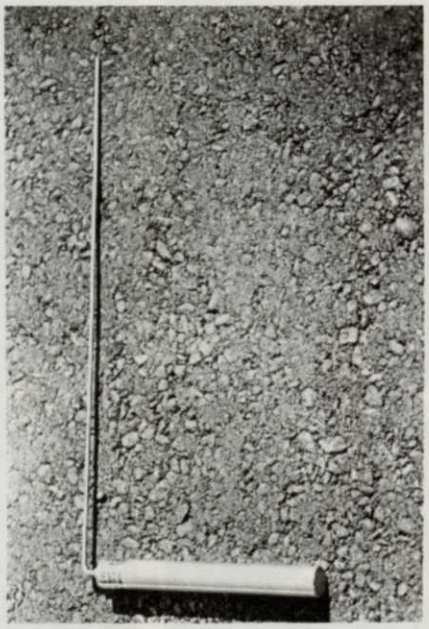
The GR-9 can mow at speeds up to six miles per hour while being towed by a 20 hp tractor.

Circle No. 196 on Reader Inquiry Card

Tool locates buried pipe, other material

The Locat from Bloch & Co., is a sensing device that locates and traces buried pipe, sewer lines, drain tile and other buried material.

The device weighs only a pound-and-a-half and operates without batteries or earphones. The improved Locat rotates on three bearings when it comes across the threshold of a pipe. It comes with an audio training cassette and written instructions on use.



The Locat is accurate, locating both edges of pipe or other material. It is ideal for locating old irrigation lines and drain tile and will locate any form of material, from metal to PVC.

Circle No. 197 on Reader Inquiry Card

Weed trimmer has telescopic qualities

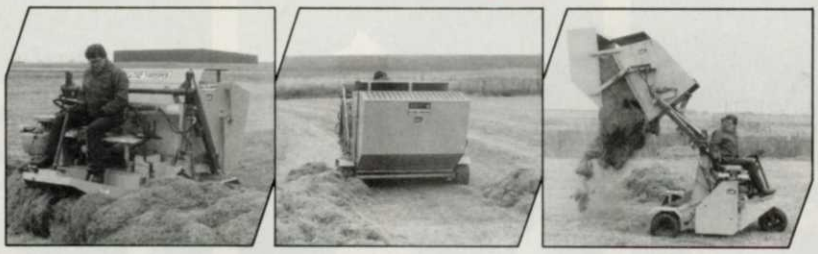
Tanaka Kogyo USA plays the innovator with the introduction of its telescopic trimmer, the TST-218. The 218's shaft "telescopes" down from 78 inches to a compact 50 inches for convenient transport on a truck or in the trunk of a car.

This 1 hp 11-lb. trimmer has bullhorn handles and a pivotal shaft that can be swivelled 360 degrees independently from the engine and locked into any position for easier edging or hillside cutting.

Circle No. 198 on Reader Inquiry Card

Equipment for the turf care professional. Olathe

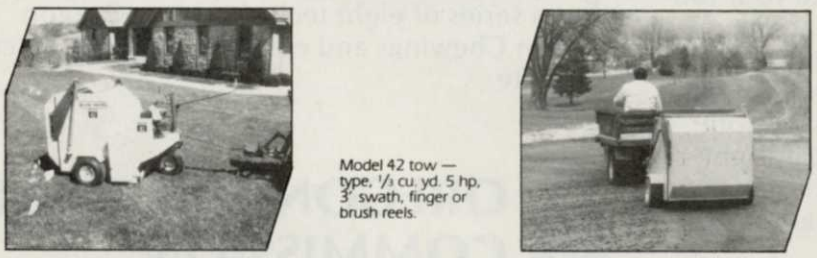
Setting the standards for sweepers.



Feel like your grass clippings may be getting ahead of you? Try this model 54HL 5' self-propelled sweeper unit with high lift for large area cleanup. 24hp engine, hydraulic-drive, with optional thatcher, sweeps wet or dry materials using 'sure-grip' rubber fingers.

Olathe personnel have been helping solve leaf/debris problems for over 30 years. Ranging in size from our model 42 (36" wide, 5hp tow-behind) to the large area tow units which are the 166e, the 166hl and the 65 PTO (all with 5' width, 5 cu. yd. capacities). Ground and high lift models.

Model 65 PTO-powered 5' width. Model 166e 5' hydraulic ground dump. Model 166hl 5' width, 8 1/2' lift.

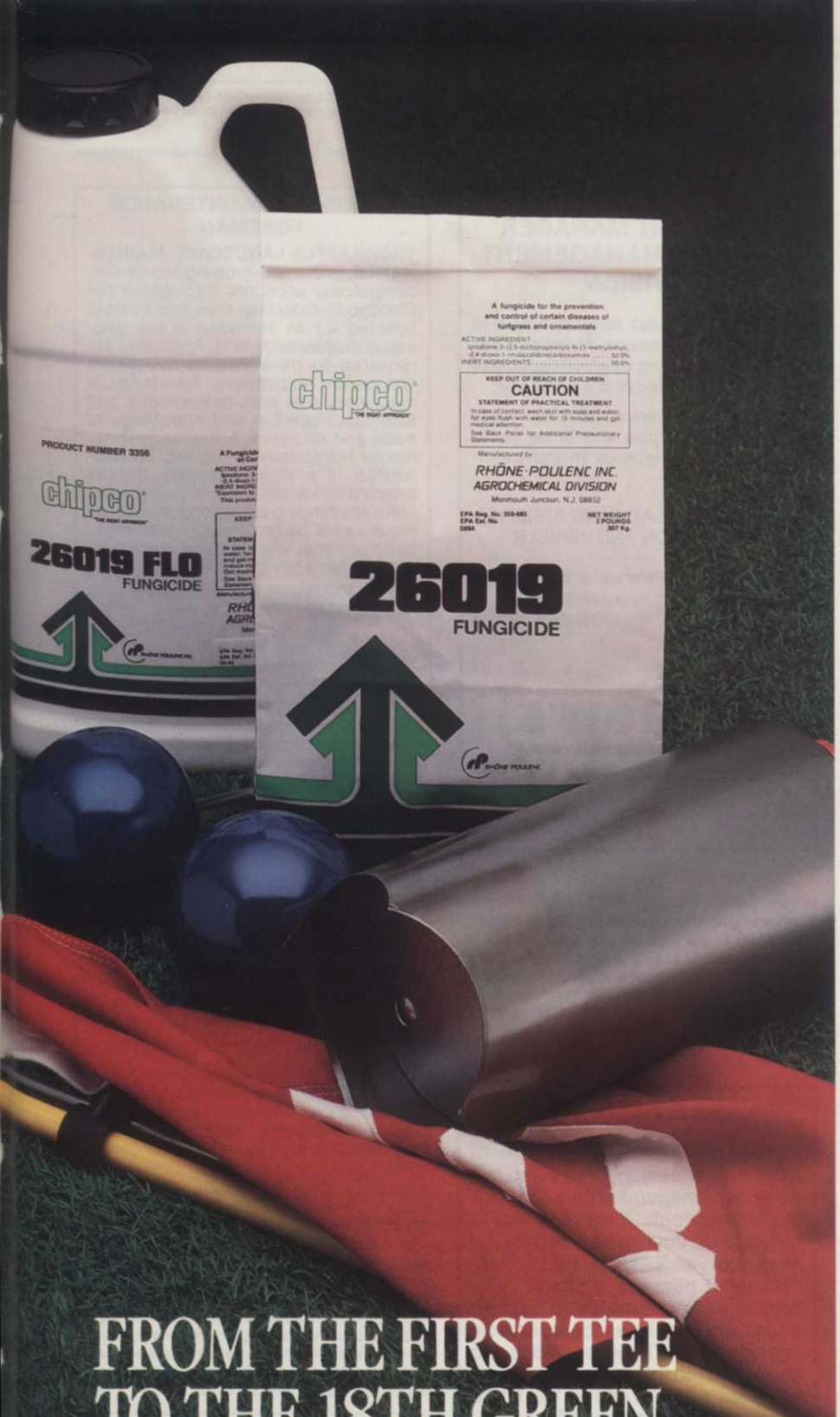


Model 42 tow — type, 1/3 cu. yd. 5 hp, 3' swath, finger or brush reels.

Write or call your local Olathe/Toro dealer for free demo or call 1-800-255-6438.

OLATHE MANUFACTURING, INC.
100 INDUSTRIAL PARKWAY, INDUSTRIAL AIRPORT, KANSAS 66031
800-255-6438
913-782-4396

Circle No. 134 on Reader Inquiry Card



FROM THE FIRST TEE TO THE 18TH GREEN, NOTHING CONTROLS TURF DISEASES LIKE CHIPCO® 26019.

FUNGICIDE

For season-long, full-course protection, base your disease control program on CHIPCO 26019 fungicide.

When it comes to season-long, full-course protection, more and more superintendents are building their disease control programs around CHIPCO 26019 fungicide. That's because CHIPCO 26019 fungicide offers more important features than any other turf fungicide.

First of all, CHIPCO 26019 fungicide provides unsurpassed control of all major turf diseases: Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight and Red Thread. Plus, CHIPCO 26019 fungicide protects against Pink and Gray Snow Mold as well as Fusarium Patch.

Secondly, CHIPCO 26019 fungicide delivers the longest-lasting disease control you can buy. Just one application protects your turf up to four full weeks.

Based on cost per day of control, CHIPCO 26019 fungicide ranks as your best fungicide value. That makes it the ideal replacement for fairway disease control.

You'll also like the fact that CHIPCO 26019 is easy on the environment, with no phytotoxicity. And now you can choose between two convenient formulations—wettable powder or flowable.

This season, cover your course with the best in disease control. CHIPCO 26019 fungicide.

Rhone-Poulenc Ag Company, CHIPCO Department, P.O. Box 12014, Research Triangle Park, NC 27709.

CHIPCO® 26019

FUNGICIDE

RHÔNE-POULENC AG COMPANY

Please read label carefully and use only as directed.
CHIPCO® is a registered trademark of Rhone-Poulenc.

Circle No. 140 on Reader Inquiry Card

CLASSIFIEDS

RATES: $1.10 per word (minimum charge, $25). Bold face words or words in all capital letters charged at $1.35 per word. Boxed or display ads: $90 per column inch-1x (one inch minimum); $85-3x; $80-6x; $75-9x; $70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $10 to total cost of ad. Send ad copy with payment to Dawn Nilsen, LANDSCAPE MANAGEMENT, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

BOX NUMBER REPLIES: Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 1 East First St., Duluth, MN 55802. Please include box number in address.

BUSINESS OPPORTUNITIES

CURB KING - Concrete landscape borders, low investment and high returns. 1-800-423-1452. 8/88

WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

IN MONTANA. Established working lawn service; one man operation; room for expansion; full time business for 8 years. Includes snow removal. Call 406-656-9145, Chris Swenson. 8/88

EDUCATIONAL OPPORTUNITIES

GRAYSON COLLEGE, Denison, Texas. Two-year technical program in Golf Course and Turfgrass Management. 18-hole golf course on campus. Dormitories, placement assistance, financial aid and scholarships available. Contact: GCC, 6101 Grayson Drive, Denison, TX 75020. 214/465-6030 extension 227. 8/88

HELP WANTED

LANDSCAPE EMPLOYMENT OPPORTUNITIES - One of the Midwest's largest commercial landscape contracting and maintenance firms seeks motivated, quality individuals to fill the following positions: Landscape Construction Superintendent, Estimator/Contract Administrator, Landscape Materials Buyer, Foremen, Pesticide Applicators. Excellent salary and benefit package. Send resume to: Reinhold Landscape, Inc., 23216 Telegraph, Flat Rock, MI 48134. 9/88

LANDSCAPE DESIGNER: Greener Landscapes is seeking an experienced landscape designer to join our rapidly growing organization. You must be able to oversee projects from beginning to end including design, job cost estimation and overseeing installation. The ability to design, present and sell your designs will be essential to your success. Qualified candidates send resume with salary requirements to Greener Landscapes, P.O. Box 341, Bedford Hills, NY 10507, or call 914-666-0714. 8/88

NURSERY MANAGER - Take charge person, strong knowledge of plant material and plant production. Tremendous growth potential. Eastern Long Island. Send resume to: Box 226, Centerport, New York 11721. 10/88

AGRONOMIST: Middle management position with Lawn Doctor, Inc. the nation's leader in franchised lawn care. Position involves working with franchises on turf program development and agronomic training. BS in Agronomy or related area and good communication skills necessary. Reume & salary history to: 73 Atlantic Avenue, Matawan, NJ 07747. 8/88

SALES MANAGER: Mid Atlantic turf-ornamental supply business with history of continued growth. Seeks a motivated person with 5-8 years sales to the turf and ornamental or agricultural markets. Person should have sales training, market planning experience. Competitive salary, benefits, opportunity for professional growth. Send resume to: LM Box 453. 8/88

ASSISTANT MANAGER GROUNDS MANAGEMENT DIVISION

New Jersey's most progressive, well equipped Landscape Management Company is seeking a person capable of managing a division of our company.

Individual must have at least two years Horticultural degree and three years managerial experience in the Landscape Industry.

EXCELLENT SALARY AND BENEFITS
COMMISSION AND VEHICLE

Contact William H. Peterson at 201-992-0598
between 8 and 5
MON-FRI

DuBROW'S

GROUNDS MANAGEMENT DIVISION

"The Ultimate In Landscaping"

Willoughby Golf Club in Stuart, Florida will be soon interviewing for a Head Mechanic and an Irrigation Technician to manage the golf and grounds departments. Salary ranges between $18,000-$22,000. Positions available October 15, 1988. Please send resume to: Willoughby Golf Club, 1600 Indian Street, Stuart, Florida 34997, Attn: Kevin Downing. 8/88

MANAGEMENT

Ever-Green Lawns, a division of ADT, Inc., is seeking sales and operations management personnel for the Philadelphia market which is projected to double in sales over the next two years. To qualify, candidate must possess a proven successful track record in the Eastern Coast area in sales or operation management. These positions are hands on with the opportunity to set a career path over the next two years. We offer an excellent compensation package and benefits including: health, dental, life, LTD, 401 (k), vacation, holidays and sick days. If you are "Results Oriented" with a desire to achieve above average goals and wanting to grow with a leader in the industry, submit resume including salary history to:

Ever-Green Lawns Corp.
1080 Industrial Highway
Southampton, PA 18966

LANDSCAPE MAINTENANCE FOREMAN

THORNAPPLE LANDSCAPE MAINTENANCE, INC. a fast-growing firm serving commercial accounts throughout the Chicago Metropolitan area, has a career opening for an individual in the landscape maintenance field. Applicants are required to have two to five years "hands-on" experience, knowledge of machinery use and maintenance and technical expertise and knowledge of pests and diseases. A degree in Ornamental Horticulture is desired. **THORNAPPLE** is a well regarded, quality oriented firm which will give the right person a challenging career opportunity. All inquiries will be completely confidential. Send resume, work history and salary requirements to

THORNAPPLE LANDSCAPE MAINTENANCE, INC.
Attn: Mr. Steve Pease
P.O. Box 626
Geneva, IL 60134

LANDSCAPE SUPERVISOR. ("INC 500 company") Talented, experienced, supervisor to manage landscape department including scheduling and training personnel development. Challenging growth opportunity with good salary, benefits and company vehicle. Send resume: Attn: Monty Mitchell, Suburban Landscape Associates, P.O. Box 2342, Davenport, IA 52809. 8/88

IRRIGATION SUPERVISOR. ("INC 500 company") Experienced, aggressive, sales supervisor to manage lawn sprinkler system department including sales, installation and service. Challenging growth opportunity with good salary, benefits, and company vehicle. Send resume: Attn: Monty Mitchell, Suburban Landscape Associates, P.O. Box 2342, Davenport, IA 52809. 8/88

Tree care person — experienced in Horticulture or Aboriculture. Will train tree climbing and/or spray applicator. Salary & benefits commensurate with ability and experience. Send resume to: Tree Care, Inc., 216 East Main St., Huntington, NY 11743. 8/88

An Inc. 500 and Lawn Care Industry "Top 30" Landscape Management Company is looking for an applicator/manager for its chemical lawn care division. Responsibilities include scheduling, purchasing, site evaluations, applications and training. Candidate must have extensive knowledge of chemicals and various application methods used for turf, trees and shrubs. Send resume and salary history to: Minor's Lawn Care Inc., 2901 Montgomery Street, Fort Worth, TX 76107. 8/88

DISEASE AND INSECT CONTROL SUPERVISOR - Milwaukee, Wisconsin area firm has full-time, year-round position available in landscape management. Successful candidate will develop lawn care and ornamental tree and shrub spraying programs as well as supervise other technicians and act as a resource specialist. Knowledge of chemical products, safe handling and use and of plant diseases and insects of this area are a must. Familiarity with state pesticide laws and requirements is preferred. Call Lied's Inc. collect 414-246-6901 or send resume to: Ritch Skelton, Lied's Inc., N63 W22039, Hwy. 74, Sussex, WI 53089. 8/88

Some of life's best lessons are learned in the school of 'soft knocks'

The young man on the left will fall several times before he hits his first home run. The young man on the right wants him to have the advantage of falling on real turf.

We think it's curious that the same lawmakers who insist that individuals and corporations make environment and products safer for children neglect to legislate safer standards for school playgrounds.

It's no doubt easier to make us spend our own cash to improve conditions than to appropriate public funds for safe playing areas.

Things are changing ... slowly ... but NSTC has been instrumental in distributing information and talking to some appropriate people, but it all takes time and money.

While we're waiting for the big picture to change, we can all improve our little corner ... like planting an improved turf plot of our own, then using it! When officials see how much more fun we're having, they'll no doubt want in on the action.

For free brochure and membership application, call or write to Fred V. Grau, Chairman

NSTC
NATIONAL SPORTS TURF COUNCIL

USDA • ARS • BARC
Bldg. 001, Room 333
Beltsville, MD 20705
301/344-3655

HELP WANTED

ASSISTANT GOLF COURSE SUPERINTENDENT - Three (3) openings with Baltimore Municipal Golf Corporation. Full time, salaried positions. Send resume to Russell J. Bateman, Director of Maintenance, 6131 Hillen Road, Baltimore, MD 21239. 8/88

IRRIGATION SALES - We are expanding our Irrigation Division, and are seeking a salesperson experienced in design and/or sales of golf course and commercial irrigation systems. Excellent benefits and growth potential. Please send resume to: S.V. Moffett Co., Thruway Park Dr., West Henrietta, NY 14586 Attention: Ken White. 8/88

Landscape Architects/Supervisors (project foremen) to join a nationally acclaimed firm looking to expand into its second generation Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to: **GOLDBERG & RODLER, INC.,** 216 East Main Street, Huntington, New York, 11743. 8/88

WANTED - Aggressive Manufacturer's Reps - Manufacturer of agricultural, golf course, municipal and lawn & garden spraying equipment is seeking qualified reps with experience in sprayer sales. Seeking nationwide network, exclusive territory contract, excellent technical support and top of the line equipment. Send resume and current line card to: The Broyhill Company, P.O. Box 475-CB, Dakota City, NE 68731-0475. Phone: 1-800-228-1003. 8/88

Florida Landscape Contractor in business 15 years, has an opening for an experienced landscape architect or highly qualified sales person to handle design build sales and business development. Applicant must be a self-starter and possess strong sales skills. Unlimited potential in a growing firm with a top notch track record. Contact Mr. Singh (305) 831-8101. 9/88

GROW WITH TURF: Career opportunities are available for professionals with experience in lawn care, landscaping and irrigation. We're looking for aggressive self-starters to join our organization. Thrive on the challenge of our growth. Enjoy above average earnings and excellent benefits. Send resume and salary requirements to Turf, P.O. Box 433, Moorestown, NJ 08057 or call (609)778-0780. 8/88

CAREER OPPORTUNITY - Established growth oriented midwest firm seeks organized dynamic individual to manage landscape contracting division. Must have related degree and solid experience to qualify. Current division responsibilities include sales in excess of $3,000,000 in staff of 80. Excellent salary, commission plan and full benefit package. Send resume in confidentiality to LM Box 455. 9/88

Established Central Florida landscape contractor has an opening for a highly qualified operations manager for its maintenance division. Ability to schedule, organize and manage people in a rapidly growing organization. Heavy field experience and a commitment to quality work required. Opportunity for an aggressive person to be a key member of a top-notch team. Excellent salary and benefits. Call Mr. Singh (305) 831-8101. 9/88

JOIN THE AMERICAN TEAM - And go for the gold...Aggressive landscape company looking for aggressive career minded winners of landscape/irrigation sales; estimating; purchasing; supervision nursery production and sales. Salary and benefits commensurate with experience. Equal opportunity employer. Send resume to Mickey Strauss, American Landscape Companies, 7949 Deering Ave., Canoga Park, CA 91304 (818)999-2041. 8/88

MANAGEMENT

Due to our aggressive expansion program in the midwest, east coast and southwestern regions, we are needing management personnel for all phases of our tree & shrub and lawn care services, in both residential and commercial operations. If you are "Results-Oriented" with a strong desire to achieve and high personal goals, send resume including salary history to:

Corporate Recruiter
Ever-Green Lawns Corp.
1390 Charlestown Ind. Dr.
St. Charles, MO 63303

PERSONNEL: Hydro Lawn, a Mid-Atlantic full service lawn care company is accepting applications for Sales/Customer Service management positions. Applicants must be aggressive, responsible, neat and experienced in sales/customer service. Compensation from $25-35,000 plus full benefit package. Send resume to: Hydro Lawn, Inc., 7905 Airpark Road, Gaithersburg, Maryland 20879. TF

MANAGERS & SUPERVISORS

Where People Are The Root Of Our Success

Appreciation. Reward. Mutual dedication and respect. These are the elements of a great career. As a landscape professional, you have a need to see the end product of your efforts and to see the environment improved by your dedication. Here at the Brickman Companies, we share this philosophy, so we provide you with the room to grow and all the resources you need to get the job done. After all, we could not have become the largest landscape design/build/maintenance firm in the country without people like you dedicated to giving our clients total satisfaction and the best in quality. Our rapid expansion in the Midwest, Mid-Atlantic, and Northeast U.S. has created several outstanding career opportunities for landscape managers and supervisors.

If you want to start your career with a leader in the industry or wish to advance your career in both responsibility and earning potential, now is the time to contact Brickman. You must be team-oriented, energetic, and have excellent leadership, communication and interpersonal skills.

In return, Brickman offers you terrific advancement opportunities, year-round employment, tuition reimbursement, relocation assistance, and a highly competitive salary and benefits package. For immediate and confidential consideration, please call (toll free) 800-451-7272 or send your resume to:

The Brickman Group, Ltd.
Corporate Office
Joseph W. Lipsey,
V.P. Human Resources
One Pitcairn Place
Jenkintown, PA 19046

800-451-7272

Equal Opportunity Employer, M/F/H/V.

THE BRICKMAN GROUP, LTD.
Landscape Architects/Contractors/Horticultural Services

HOW TO CONQUER THE EARTH.

In order to lay the proper groundwork, you'll need a superior ground force. Like you've come to expect from Kubota.

This time we've broken the mold with the first walk-behind tiller to feature a liquid-cooled diesel engine. Three forward speeds, one reverse speed and seven-horsepower will help the AD70 make light of even the toughest, most sod-bound dirt.

Its tines dig especially deep when counter-rotating, pulling hard-packed soil up by the roots. Running forward, they'll turn up fine seed beds and seed cover.

There's a steering clutch on each wheel for precision maneuverability. There's a tiller clutch to stop the tine action immediately—keeping you well out of harm's way. While adjustable handlebars that swing left and right take care of keeping you out of those freshly tilled rows.

All it takes is a quick electric start, and you're ready to turn the earth around. To receive more information on Kubota's diesel tiller or our 2.2-7 hp gas-powered tillers, simply write to us at Kubota Tractor Corporation, P.O. Box 7020-A, Compton, California, 90224-7020.

KUBOTA®

Nothing like it on earth.™

© 1988 Kubota Tractor Corporation

We are recruiting!

We're looking for knowledgeable people in the following areas:

Environmental Care, Inc.
landscape management

Arbor Care
commercial & industrial arboriculture

Interiorscape Division
interior landscape maintenance

Positions available in:

Los Angeles	East Bay	Inland Empire
Sacramento	Santa Ana	Phoenix
San Diego	San Jose	Denver
Houston	Ventura	ColoradoSprings
Palm Springs		

Send resume to:

Robert L. Scofield
Personnel Department
24121 Ventura Boulevard
Calabasas, CA 91302

an equal opportunity employer by choice

LANDSCAPE PROFESSIONALS - Excellent employment opportunity available for career-minded individuals to join our **SPECIAL SERVICE DIVISION**. We are looking for self-motivated individuals that enjoy a challenging career. Responsibilities include overall pest and disease control in all commercial locations, as well as upkeep of major atrium plantings through a regular program of pruning and wash-downs. Salary commensurate with experience, efficiency and expertise. Call or send resume to: CREATIVE PLANTINGS, INC., P.O. Box 119, Burtonsville, Maryland 20866, Attn. Raymond Greenstreet. 8/88

ServiceMASTER

If you are in the lawn care business, ...in a related field, or...just looking to get started...

WE CAN HELP YOU GROW!

Our network of over 3600 independently owned franchised businesses worldwide testifies to our ability to help the small business owner to flourish. If you are enthusiastic, growth-oriented, and interested in learning what ServiceMaster has to offer, then we are interested in getting to know you!

For more information call:

Roger Nondorf
ServiceMaster LawnCare
1-800-255-9780

Arborist - Tree climber and spray applicators, experienced or will train forestry or horticultural student. Tremendous growth potential. Tree Care, Inc., 216 East Main Street, Huntington, New York, Area Code: 516-#424-9440 or #424-9441. 9/88

Lawn Care $20M-$50M

Career opportunities coast-to-coast. Employer retained. Experts in personnel since 1968.

USA Careers 515-394-2556
New Hampton, IA 50659

FOR SALE

ZOYSIA MEYERS Z-52 SOD OR SPRIGS. EXCELLENT QUALITY DELIVERED ANYWHERE AT REASONABLE PRICES. ALSO ROW PLANTING AVAILABLE. DOUBLE SPRINGS GRASS FARM, SEARCY, AR. 1-800-458-4756. TF

1986 JLG Pallet-Pro forklift. Model 4000, 3 wheel drive, gas engine. Side shift, lights, 4000 lb. capacity. Phone days - 219-232-6811, evenings 219-654-7749. New Carlisle, IN. 8/88

FOR SALE 5 gang Brouwer reel mower. New 6 blade reels and bed knives. Every Bearing and seal replaced, all new belts, pulleys and jack shafts $4800.00. Land roller 10′ wide by 3½′ height 4″ square tube frame with 3″ pillow block bearings. Brand New $1800.00. Phone 406-265-9790 Havre, MT. 8/88

Brouwer Sod Harvester, 18″ mounted on 3600 Ford Diesel, $15,000.00 Meyers Turf Farms, 913-681-2668. 8/88

PIPE LOCATOR - Inexpensive! Locates, traces PVC, metal, cement pipes, sewers, septic tanks, electric, phone, gas lines. Block & Company, Box 18058, Cleveland, OH 44118. 216-371-0979. TF

HYDRO-MULCHERS AND STRAW BLOWERS New and used. **JAMES LINCOLN CORPORATION,** 3220 S. Jupiter Rd., Garland, TX 75041. (214) 840-2440 (TX), (800) 527-2304 (except TX). TF

Finn Hydroseeders, Mulch Spreaders, Krimpers, Pit Burners, Fiber Mulch & Tackifiers. New & Used. Wolbert & Master, Inc., P.O. Box 292, White Marsh, MD 21162, 301-335-9300. TF

THE AFFORDABLE STUMP CUTTER: Stainless Steel, HEAT TREATED, 5½ lbs., FAST, SAFE cutting. Unique locking system holds 6 grooved carbide teeth removed with one recessed bolt. Compatible with new or old two wheel Gravely Tractors. Kinetic Stump Cutter Inc., 1220 W. Hawie Street, Jupiter, FL 33458 or (407) 744-0680 after 5 p.m. EST. 12/88

For Sale - new **Ford Super Duty** trucks F450. Immediate delivery. 14,500 GVW. $15,500 diesel. Gas also available for immediate delivery. For information call Geoff Carroll at 800-237-7785. 8/88

BROUWER-7 Gang PTO mower and new parts. Low use, good condition. $5,500. **FOLEY**—388 reel sharpener, like new, $1,500. (405) 771-5122. P.O. Box 424, Spencer, OK 73084. 8/88

Ungalvanized Wire Baskets and Burlap Liners for tree spades and hand dug made by Colorado Wire Products, 9432 Motsenbocker Road, Parker, CO 80134. 303/841-3354. TF

SPYDERS—New/Used/Rebuilt. New Kohler engines, short blocks and a complete line of engines and Spyder replacement parts. New Style Nichols-Fairfield Torque Hub Kits, heavy duty Wilton Caster, Hub Kits, Remote Air Cleaner Kits,heavy duty Carriage Side Plates. Call or Write: Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. 815-455-7363. 8/88

Long mfg. big gun travel irrigation system with new 3 ¾″ I.D. hose, with 2,000 ft. of 6″ aluminum pipe. Will irrigate up to 20 acres per day. Also, (2) 1,500 GPM, 100 PSI pumps, with V8 motor on self-contained full trailers. Seven Cities Sod, Inc., 319-391-1663. 8/88

ATTN: GOLF COURSE SUPERINTENDENTS—Bentgrass Sod at putting green height, guaranteed weed and poa annua free. Stormy Acres, West Haven, VT 05743. 802-265-3046. TF

STUMP CUTTER - Compatible with two wheel Gravely tractors. Stainless steel, heat treated, 6 carbide cutters 9/16″ rounded tips, one bolt change. Kinetic Stump Cutter Inc., P.O. Box 115, Jupiter, FL 33468-0115 or call 1-800-422-9344. 12/88

For Sale: Semi-trailers with 4000# capacity unloading booms, $5000 & $6000. Tandem truck with 21 ft. bed; $12,500. Good condition. Beck's Turf, Auburn, AL. ph. (205) 821-0969. 8/88

Mid states Turf Growers-Full line Sod Company. Bermuda 9¢ sq. ft., Blue Grass 10¢ sq. ft., K 31 Fescue 10¢ sq. ft., St. Augistine 15¢ sq. ft., Centepede 15¢ sq. ft., Zoysia 25¢ sq. ft. Trucking $1.75 loaded mile. 913-681-2669. 8/88

FOR SALE: Established Garden Center and Landscaping business in Upper Michigan. (Both or just Garden Center). Owners retiring. For more information write: P.O. Box #7872, Ann Arbor, MI 48107. 8/88

Ryan sod cutter rebuilt $1100. W/rollryder $1500. Torro 5 gang sharpened $1500. Wisconsin sod farm & equip. 414-326-5267. 8/88

ATTENTION GOLF COURSE SUPERINTENDENTS: Great Meyer Zoysia for your Fairways and Tees. Guaranteed Bermuda free. Beauty Lawn Zoysia (Cincinnati) 1-513-424-2052. 3/89

CUSTOM LANDSCAPING TRAILERS. Protect your investment from exposure and theft. Choice of colors, delivery available. **NORTHWEST TRAILERS,** Palatine, IL 800-522-6208 or 312-577-6208. 8/88

LAWN SEED. Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 89 Hanna Parkway, Akron, OH 44319. Call collect (216) 724-1266. TF

BRAND NEW TOPSOIL SCREENERS. EXCELLENT FOR CONTRACTORS, LANDSCAPERS OR GOLF COURSES. NO MOVING PARTS, SIMPLE TO USE. SIZES AVAILABLE 8′ × 8′, $3,995. AND 12′ × 8′, $4,995. NORTH AMERICAN CONTRACTORS 216-799-9725. 10/88

If it's not Certified Manhattan II, it's not 'such a deal' after all.

Some dealers are offering you a deal to take something they call Manhattan off their hands

THE REAL BAG

Manhattan Ryegrass Growers Association has the exclusive contract to produce Manhattan and Manhattan II perennial Ryegrasses. These select seed growers have not produced the old Manhattan strain for years, so much of what is being produced as Manhattan is probably not true Manhattan.

The improved *certified* Manhattan II, co-developed by Dr. Bill Meyer at Pure Seed Testing and Dr. C. Reed Funk has significant improvements over the old Manhattan ... like rust and disease resistance, darker green color and better plant density.

So what is their stuff? We *know* it bypasses seed certification and royalty programs. And, because it's not certified, we have no way of knowing just what's in the bag.

And neither do you.

Qualified turf associations can earn cash for turf research by saving Manhattan II blue tags. Contact your dealer for details.

PVP 8200154. Unauthorized propagation prohibited.

Manhattan II

TURF-TYPE PERENNIAL RYEGRASS ONLY FROM

Turf Merchants, Inc.

33390 Tangent Loop Road
Tangent, OR 97389
800-421-1735 FAX 503-926-4435
(503) 926-8649 TWX 910-997-0773

Turf-Seed, Inc.

P.O. Box 250 • Hubbard, OR 97032
800-247-6910 FAX 503-981-5626
503/ 981-9571 TWX 510-590-0957

Circle No. 145 on Reader Inquiry Card

. . . USE THE BEST

Silva-Fiber®
100% Virgin Wood Fiber
For Hydraulic Planting

1-800-443-9179

Weyerhaeuser
EF-4 Tacoma, WA 98477

Circle No. 147 on Reader Inquiry Card

REINCO HYDROGRASSERS and power mulchers in stock. Opdyke Inc. (Philadelphia Area) 215-721-4444. TF

Landscape installation + lawn maintenance co. Northern Ohio - established 15 yrs. — 250K plus - Unlimited growth potential. 1-216-769-3238. 10/88

MISCELLANEOUS

LANDSCAPE TRAINING VIDEOS
Intermediate mower maintenance field and shop repair; efficient/profitable mowing techniques; professional shrub trimming, etc. **ENGLISH AND SPANISH.** Write for free brochure.
C.D. Anderson Landscape Videos
515 Ogden Avenue
Downers Grove, IL 60515

LANDSCAPERS SUPPLY FREE CATALOG. Buy direct and save up to 75% on a full line of commercial lawn maintenance equipment, engines, parts and accessories. Call Toll Free **1-800-222-4304.** 12/88

WANTED

WANTED: Large Lindig and Royer Shredders. Lewis Equipment. 320 Third Street S.W., Winter Haven, FL 33880. (813) 294-5893. 10/88

USED EQUIPMENT

BUCKET TRUCK: Hi Ranger 65′, 57′, 50′. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

BUCKET TRUCKS, Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers - New Morbark Disc Type, New Woodchuck Drum Type. Best prices anywhere. Used Chippers - Asplundh, Woodchuck, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as is or reconditioned. Opdyke's, Hatfield (Philadelphia Area) 215-721-4444. TF

NEW AND USED EQUIPMENT—Asplundh, Hi Ranger and Lift-all forestry bucket trucks, Chipmore wood chippers. Mirk, Inc., (216) 669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

POSITION WANTED

Horticulturist seeking management position in the green industry. Qualifications include M.S. in Agriculture, experience in grounds management, woody ornamental production and greenhouse management. Resume available. Reply to: LM Box 456. 8/88

send a Classified Advertising message...
...write here.

(Please Print) _____

1. Number of insertions: (circle) 1 2 3 6 9 12 TF (Til Forbid)
2. Start with (month) _____ issue. (Copy must be in by 5th of month preceding)
3. Amount enclosed: $_____

To keep our rates as low as possible, payment must accompany order.

SIGNATURE _____ DATE _____

NAME _____ COMPANY _____

STREET _____

CITY _____ STATE _____ ZIP _____

PHONE NUMBER _____

MAIL AD COPY TO: Dawn Nilsen, LANDSCAPE MANAGEMENT, 1 East First Street, Duluth, MN 55802.

RATES: $1.10 per word (minimum charge, $25). Boldface words or words in all capital letters charged at $1.35 per word. Boxed or display ads: $90 per column inch, one time; (one inch minimum); $85, three times; $80, six times, $75, nine times; $70, twelve times. For ads using blind box number, add $10 to total cost of ad.

...serious about beautiful turf? put the Brouwer™ anti-thatch team to work.

Verti-Cut

For fast, economical, vertical mowing, the Brouwer Verti-Cut™ is the ideal machine.

A regular use program enables you to control the level of troublesome thatch. It allows valuable chemicals, fertilizers and also water to penetrate to the roots. Other important benefits are improved aeration, better results when overseeding and reduced surface compaction.

- **Low 35 h.p. tractor requirement**
- **138 in. cutting width**
- **Easy blade depth adjustment**
- **Variable blade spacing**
- **Economical to buy and operate**

Brouwer-Vac.™

Largest capacity vacuum unit of its type, for fast, economical work cleaning up thatch from verti-cutting on sod farms, golf courses, parks and recreation areas. A huge pick-up head and powerful suction fan make easy work of trash and litter at airports, parking lots, racetracks and hard surface areas. The optional hose extension allows easy clean-up around trees, fences, culverts and ditches.

- **Up to 10 ft. wide suction path**
- **Huge 335 cu. ft. capacity**
- **Hydraulic unload conveyor**
- **P.T.O. drive 35-45 h.p. tractor**
- **Finger-tip hydraulic controls**

For more information about this and other fine turf care equipment, phone your Brouwer dealer ... TODAY

BROUWER
TURF EQUIPMENT LIMITED
An Outboard Marine Corporation Company

7320 Haggerty Rd./Canton, MI. 48187 Telephone (313) 459-3700
Woodbine Avenue/Keswick, Ontario, Canada L4P 3E9 Telex 065-24161 Telephone: (416) 476-4311

88-93

Circle No. 103 on Reader Inquiry Card

ADVERTISER INDEX

NO.	ADVERTISER	PAGE NO.
101	Brouwer Turf Equipment	37
102	Brouwer Turf Equipment	25
103	Brouwer Turf Equipment	73
104	Bunton Co.	2-3
105	Cushman/Lawnaire	51
106	Cushman/Frontline	29
107	Cushman/Matway	18
108	Elanco Products Co./ Rubigan SDS (Regional)	36
109	Elanco Products Co./ Rubigan	1
110	Elanco Products Co./ Rubigan	1
111	Elanco Products Co./ Team	75
112	Elanco Products Co./XL	75
113	Estech, Inc.	7
114	Garfield Williams, Inc.	27
115	Jacklin Seed Co./ Reubens	74
116	Jacklin Seed Co./Arid	15
117	Jacklin Seed Co./ Fylking	40
118	Jacobsen Div. of Textron	43
119	Jonathan Green Div. of International Seed Co. (Regional)	65
121	Kubota Tractor Corp.	69
122	Landscape Exposition	59
123	Lebanon Chemical Corp.	55
124	Lesco, Inc.	45
125	Lofts Seed, Inc.	CV4
126	Melroe Co.	35
127	Mobay Corp./Bayleton	16-17
128	Mobay Corp./ Nemacur/ (Regional)	21
129	Mobay Corp./Oftanol (Regional)	30-31
130	Monsanto Co.	12-13
131	Northrup King Co.	41
132	Nor-Am Chemical Co./ Nitroform	CV3
133	Nor-Am Chemical Co./ Proxol	33
134	Olathe Mfg. Inc..	62
135	Oregon Fine Fescue	61
136	PBI Gordon Corp.	22-23
137	Pickseed West, Inc.	49
138	Reinco Co.	8
139	Reinco Co.	11
140	Rhone Poulenc Ag. Co.	63
141	Tee-2-Green Corp.	CV2
142	Telemark, Inc.	39
143	Turf Seed, Inc.	5
144	Turfco Mfg., Inc.	18
145	Turf Merchants, Inc.	71
146	Turf Vac Corp.	28
147	Weyerhaeuser Co.	72

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Reubens
Canada bluegrass
U.S. Plant Patent No. 3823

The right grass for water-stressed roughs, marginal maintenance areas.

Also an excellent mixture component for low-maintenance fairways and other specialized turf areas.

Reubens made its reputation in tough reclamation areas where water and nutrients were low.

These characteristics make Reubens an excellent choice for golf course roughs under drought stress or marginal maintenance conditions. Reubens is also an excellent component in fairway seed mixtures designed for low-maintenance.

Reubens germinates faster, is lower growing with dark green appearance in spring, then progressing to a blue-green color.

Insist on Reubens for your water stress or low-maintenance areas.

Available through your local wholesale seed distributor or

W. 5300 Jacklin Ave., Post Falls, ID 83854-9499
208/773-7581 FAX 208/773-4846
TWX 5107760582, Jacklin PFLS

Jacklin Seed Company

Circle No. 115 on Reader Inquiry Card

The choice is yours. Whether your customers need season-long preemergence weed control by itself or on fertilizer from leading formulators, Team fits.

Either way, you can control crabgrass and goosegrass season-long with just one application. Or even a split application, if need be, to better fit your program.

Team granular also fits your high standards of annual grass weed control. University tests show it's outstanding. Team gets to the ground and stays put to form a zone of protection that keeps weeds out all season long.

And Team does all this without hurting your turf, including sensitive bentgrass.

So spread it straight in granular form. Or spread it on fertilizer available from leading formulators. Team fits your program. See your Elanco representative. Or call toll-free: **1-800-352-6776.**

Elanco Products Company
A Division of Eli Lilly and Company
Lilly Corporate Center
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Team™—(benefin+trifluralin, Elanco)
Refer to Team label for complete use directions.

Circle No. 111 on Reader Inquiry Card

Spread it your way.

PROBLEM MANAGEMENT

by **Balakrishna Rao,** Ph.D.

In sandy soil...

Problem: *I have extremely sandy soil. What type of turfgrass does well? I run a cemetery in eastern North Carolina. None of the turf seems to build a consistent root structure. What are your suggestions for building root structure? (N. Carolina)*

Solution: Not knowing exactly what type of turfgrass you tried to establish, it is difficult to answer your question. I feel that some of the improved turf-type tall fescue cultivars should establish well in your soil providing you supply the proper water and nutrients.

Several other factors, such as light and post planting care, are important. Try planting improved tall fescue cultivars and maintain good moisture level during germination and establishment.

Another major factor to consider is the timing and method of seeding. First prepare the seed bed, making any necessary soil modifications or pH adjustment, and then spread certified seed mix. Consider incorporating some organic matter such as peat or compost to maintain better moisture content of your sandy soil. A starter fertilizer can be applied at this time. Gently rake the area to maintain contact between seed and soil. Spread straw as mulch to help maintain proper temperature and moisture. Water the area as needed until establishment. If the area is heavily shaded from trees, provide selective pruning to allow sufficient light for turfgrass survival.

Late fall fertilization

Problem: *Is one nitrogen source superior for late fall fertility? A nitrogen source that's independent of soil microbial activity (IBDU) seems like a good choice. (Montana)*

Solution: Richard Rathgens, a senior agronomist on our staff, made the following comments. For late fall, you are correct in choosing a fertilizer which is *not* dependent on soil micro-organisms for release of nitrogen. This is because a late fall fertilization should be applied at the time of the last mowing of the season when soil micro-organism activity is low.

To obtain the benefits desired, a quick-release source of nitrogen such as urea should be applied. If, however, there is a concern that nitrogen will be leached from the rootzone (e.g. sandy soils), a controlled-release source of nitrogen should be used. The type of controlled-release fertilizer used would be one whose release is dependent on soil moisture: sulfur-coated urea or IBDU.

Spreading diseases

Problem: *How big is the problem of turfgrass diseases spreading by contract mowing? (Iowa)*

Solution: The mowers can spread some of the infected disease clippings or disease agents (eg. fungi, bacteria).

A good example would be leaf spot and dollar spot diseases. For any disease to establish, it is necessary to have a virulent pathogen, susceptible host and favorable environment (eg. proper temperature, moisture, etc.) for the disease development. If any one of these factors is absent, a disease will not occur. Therefore, even if the mowers spread the infected tissues from one place to another, a disease may not develop.

To answer your question, turfgrass diseases spread by contract mowings are not a major problem because several different contributing factors should be present for disease development.

In many situations, "stress" predisposes the turt to diseases. One of the major stress factors, in my opinion, is mowing too short. This will remove the green tissue needed for photosynthesis. As a result, turf can be starved gradually. Short mowing can also scalp and allow the soil to dry out quickly. Therefore, maintain proper cutting height. If in doubt, cut at 2½ to 3 inches high to improve turf quality. A turf properly maintained with balanced fertilization, watering and pest management as needed will have less potential for disease.

See your supplier

Problem: *Which of these products (weed and feed combinations), applications, etc. is more economical for coverage on 500 acres of open turf areas? (Ohio)*

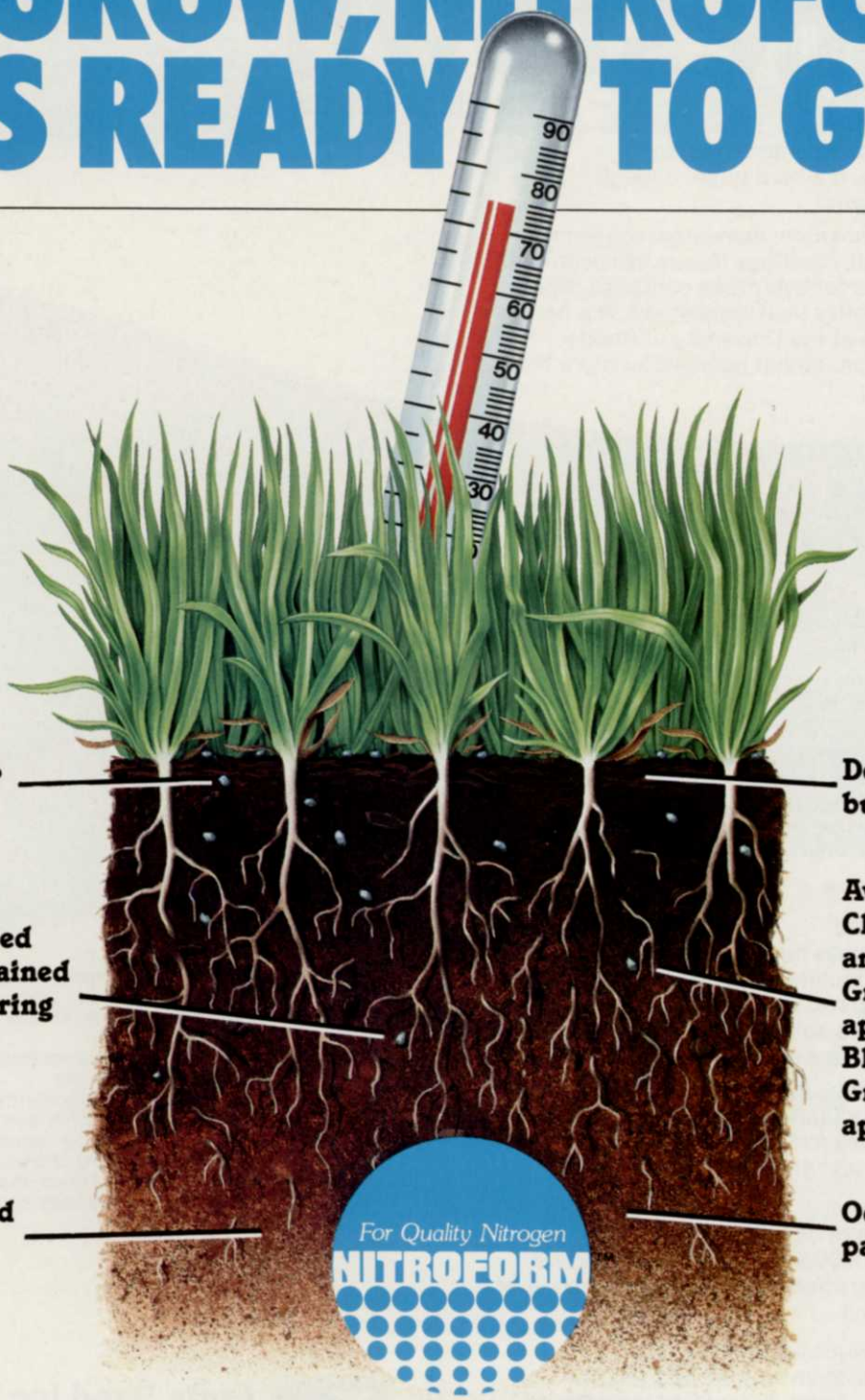
Solution: Not knowing the fertilizer analyses of the "weed and feed combinations" you are referring to or the weed problem, it is difficult to suggest a product. The economics of these products depends on the fertilizer and herbicides chosen for blending.

Without giving any brand or product name, the best thing to do is to review some of the catalogues from suppliers to determine the economics. Many of the suppliers have technical advisors on staff who can work with you.

Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

WHEN TURF IS READY TO GROW, NITROFORM® IS READY TO GO



Consistent 38% nitrogen

Nitrogen released slowly for sustained turf feeding during active growth periods

Nonburning and nonleaching

Decreased thatch build-up

Available in Blue Chip®, Gray Chip™ and new Blue Granular™ for dry application; Powder Blue® and Powder Gray™ for spray application.

Odorless and pathogenfree

Always look for the NITROFORM® logo.
It's your assurance of high-quality nitrogen.

NOR-AM
NOR-AM CHEMICAL COMPANY
3509 Silverside Road, P.O. Box 7495, Wilmington, DE 19803

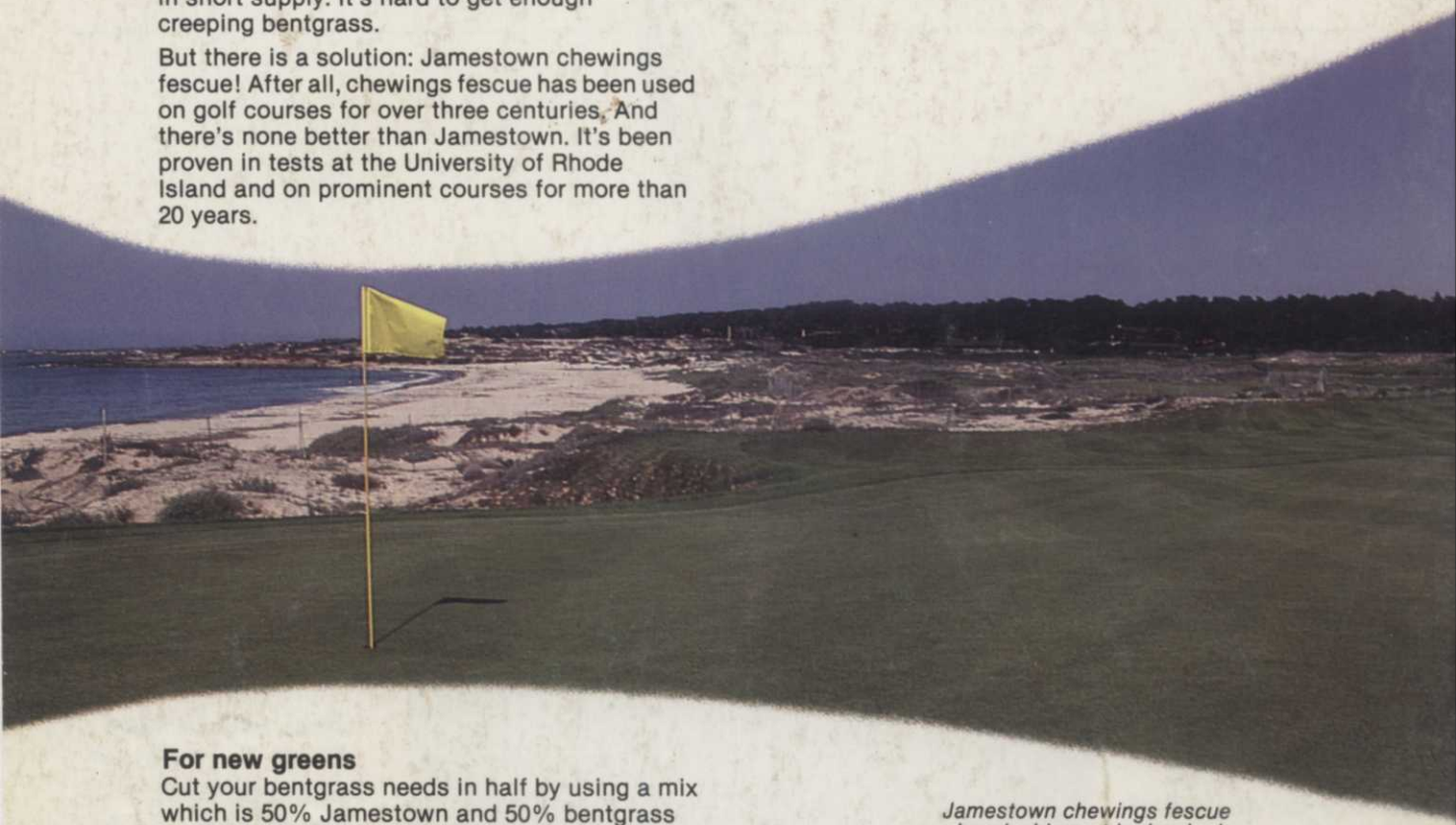
Circle No. 132 on Reader Inquiry Card

Having trouble getting bentgrass? Try Jamestown

Chewings Fescue

It's no secret that bentgrasses are in short supply. It's hard to get enough creeping bentgrass.

But there is a solution: Jamestown chewings fescue! After all, chewings fescue has been used on golf courses for over three centuries. And there's none better than Jamestown. It's been proven in tests at the University of Rhode Island and on prominent courses for more than 20 years.



For new greens
Cut your bentgrass needs in half by using a mix which is 50% Jamestown and 50% bentgrass by seed weight. Not only will this match the performance of a solid bent, but will give some added benefits as well.

Jamestown establishes quickly and puts the greens into play faster. It will perform as a companion grass for up to 10 years as the bentgrass matures and gradually dominates the turf.

For repairs
Use 3-4 pounds of Jamestown with ½ lb. of bentgrass per 1000 square feet. This mixture has proven very effective in emergency repair of damaged greens.

For winter overseeding
Consider Jamestown as part of a mix for overseeding southern Bermudagrass greens, tees and lawns. Jamestown will enhance turf performance during winter months.

So whether it's to help out with a bentgrass shortage, or add benefits to your overseeding program, try Jamestown chewings fescue.

Jamestown chewings fescue played a big part in developing The Links at Spanish Bay in Monterey, CA:

Greens:	*80% Jamestown, 20% Colonial bentgrass*
Tees:	*100% Jamestown*
Fairways:	*Blend of chewings fescue including Jamestown*
Roughs:	*Mixture of fescues including Jamestown chewings, Reliant hard, sheep and creeping red.*

Lofts Seed Inc.
World's largest marketer of turfgrass seed
Bound Brook, NJ 08805
(201) 356-8700

Lofts/Great Western, Albany, OR (503) 928-3100 or (800) 547-4063
Sunbelt Seeds, Inc., Norcross, GA (404) 448-9932 or (800) 522-7333

To locate the Lofts' distributor nearest you, call
(800) 526-3890 (Eastern U.S.) • (800) 547-4063 (Western U.S.)

Circle No. 125 on Reader Inquiry Card